

10/516,919

(FILE 'HOME' ENTERED AT 13:26:24 ON 07 JUN 2006)

FILE 'REGISTRY' ENTERED AT 13:26:38 ON 07 JUN 2006

L1 STRUCTURE UPLOADED

=> d l1

L1 HAS NO ANSWERS

L1 STR

Structure diagram not available for display

Structure attributes must be viewed using STN Express query preparation.

=> s l1

SAMPLE SEARCH INITIATED 13:27:29 FILE 'REGISTRY'

SAMPLE SCREEN SEARCH COMPLETED - 627 TO ITERATE

100.0% PROCESSED 627 ITERATIONS

50 ANSWERS

INCOMPLETE SEARCH (SYSTEM LIMIT EXCEEDED)

SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE **COMPLETE**

BATCH **COMPLETE**

PROJECTED ITERATIONS: 11038 TO 14042

PROJECTED ANSWERS: 1882 TO 3238

L2 50 SEA SSS SAM L1

=> s l1 full

FULL SEARCH INITIATED 13:27:36 FILE 'REGISTRY'

FULL SCREEN SEARCH COMPLETED - 12350 TO ITERATE

100.0% PROCESSED 12350 ITERATIONS

2244 ANSWERS

SEARCH TIME: 00.00.01

L3 2244 SEA SSS FUL L1

=> fil caplus

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

167.38

167.59

FILE 'CAPLUS' ENTERED AT 13:27:43 ON 07 JUN 2006

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PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

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FILE COVERS 1907 - 7 Jun 2006 VOL 144 ISS 24

FILE LAST UPDATED: 6 Jun 2006 (20060606/ED)

Effective October 17, 2005, revised CAS Information Use Policies apply. They are available for your review at:

<http://www.cas.org/infopolicy.html>

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=> s l3
L4      1855 L3

=> s l4 and py<2002
      21819017 PY<2002
L5      1257 L4 AND PY<2002
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=> fil reg
COST IN U.S. DOLLARS                SINCE FILE      TOTAL
                                     ENTRY      SESSION
FULL ESTIMATED COST                7.01      174.60
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FILE 'REGISTRY' ENTERED AT 13:34:18 ON 07 JUN 2006
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Property values tagged with IC are from the ZIC/VINITI data file
provided by InfoChem.

STRUCTURE FILE UPDATES: 6 JUN 2006 HIGHEST RN 887000-62-6
DICTIONARY FILE UPDATES: 6 JUN 2006 HIGHEST RN 887000-62-6

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH January 6, 2006

Please note that search-term pricing does apply when
conducting SmartSELECT searches.

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*****
*
* The CA roles and document type information have been removed from *
* the IDE default display format and the ED field has been added,   *
* effective March 20, 2005. A new display format, IDERL, is now     *
* available and contains the CA role and document type information. *
*
*****
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Structure search iteration limits have been increased. See HELP SLIMITS
for details.

REGISTRY includes numerically searchable data for experimental and
predicted properties as well as tags indicating availability of
experimental property data in the original document. For information
on property searching in REGISTRY, refer to:

<http://www.cas.org/ONLINE/UG/regprops.html>

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=>
Uploading C:\Program Files\Stnexp\Queries\516919-1.str
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L6 STRUCTURE UPLOADED

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=> d his
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(FILE 'HOME' ENTERED AT 13:26:24 ON 07 JUN 2006)

FILE 'REGISTRY' ENTERED AT 13:26:38 ON 07 JUN 2006

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L1      STRUCTURE UPLOADED
L2      50 S L1
L3      2244 S L1 FULL
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FILE 'CAPLUS' ENTERED AT 13:27:43 ON 07 JUN 2006

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L4      1855 S L3
L5      1257 S L4 AND PY<2002
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FILE 'REGISTRY' ENTERED AT 13:34:18 ON 07 JUN 2006

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L6      STRUCTURE UPLOADED
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=> s 17 and catalyst
      724011 CATALYST
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L8 1087 L7 AND CATALYST

=> s l8 and indene

14167 INDENE

L9 101 L8 AND INDENE

=> d 1-101 bib abs

L9 ANSWER 1 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2002:421732 CAPLUS

DN 136:386261

TI Ansa-zirconocenes functionalized on their cyclosilane bridges, their preparation and activity as **polymerization** catalysts

IN Lemenovskii, D. A.; Krut'ko, D. P.; Borzov, M. V.; Brusova, G. P.; Veksler, E. N.; Nedorezova, P. M.; Tsvetkova, V. I.

PA Institut Khimicheskoi Fiziki RAN im. N. N. Semenova, Russia

SO Russ., No pp. given

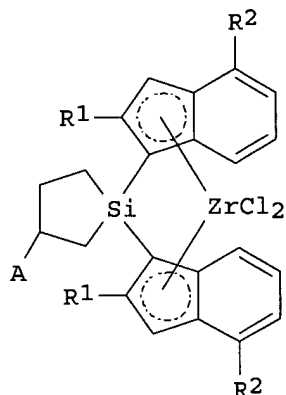
CODEN: RUXXE7

DT Patent

LA Russian

FAN.CNT 1

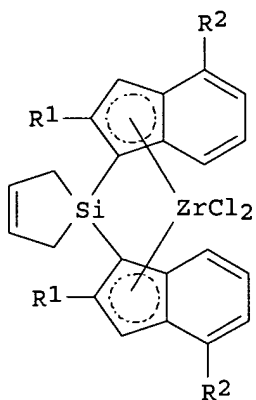
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	RU 2160277	C1	20001210	RU 1999-113532	19990621 <--
PRAI	RU 1999-113532		19990621		
OS	CASREACT 136:386261; MARPAT 136:386261				
GI					



AB Ansa-zirconocenes functionalized on their cyclosilane bridges I [R1 = H, Me, Et; R2 = H, (un)branched C1-4 alkyl, aryl; A = BC8H14, MR3; M = Sn, Si; R = (un)branched C1-4 alkyl, aryl], useful as catalysts for preparation of polyolefins, are claimed. Also claimed is a method for preparation of I comprising synthesizing substituted **indene**, preparing the Li salt of the **indene** and reaction of the latter with 1,1-dichloro-2,5-dihydrosilole in Et2O and subsequently treating the resulting dilithium salt of the corresponding Si-bridged bis-indenyl ligand with ZrCl4 to give the corresponding zirconocene and heating it in THF with an alkyl(aryl)derivative of B monohydride, Sn or Si. This method makes it possible to obtain high yields of intermediates and desired products and permits increasing content of active racemic form in metallic complex. The resulting compds. have high catalytic activity and stereoselectivity in the polymerization of propylene. In an example, reaction of indenyllithium with 1,1-dichloro-2,5-dihydrosilole gave the bis(indenyl)silole bidentate ligand which formed a dilithium salt-Et2O adduct upon treatment with BuLi in Et2O, and complexation of the latter with ZrCl4 in PhMe and subsequent functionalization with 9-BBN in THF gave I (R1 = R2 = H, AH = 9-BBN), and its catalytic activity for polymerization of propylene was demonstrated.

L9 ANSWER 2 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN
 AN 2002:416502 CAPLUS
 DN 136:386260
 TI Ansa-zirconocenes with an unsaturated cyclosilane bridge, their preparation and activity as **polymerization** catalysts
 IN Lemenovskii, D. A.; Avtomonov, E. V.; Krut'ko, D. P.; Borzov, M. V.; Kazennova, N. B.; Tsvetkova, V. I.; Nedorezova, P. M.; Aladyshev, A. M.; Savinov, D. V.
 PA Institut Khimicheskoi Fiziki im. N. N. Semenova RAN, Russia
 SO Russ., No pp. given
 CODEN: RUXXE7
 DT Patent
 LA Russian
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	RU 2160276	C1	20001210	RU 1999-113531	19990621 <--
PRAI	RU 1999-113531		19990621		
OS	CASREACT 136:386260; MARPAT 136:386260				
GI					



AB Ansa-zirconocenes having an unsatd. cyclosilane bridge I (R1 = H, Me, Et; R2 = H, (un)branched C1-4 alkyl, aryl), useful as polymerization catalysts for polyolefin preparation, are claimed. Also claimed is a method for preparation of I by reaction of a lithium derivative of **indene** with 1,1-dichloro-2,5-dihydrosilole in Et2O to give a bis-indenyl ligand having a cyclosilane bridge; subsequent dilithiation of the bis-indenyl ligand thus obtained affords a salt which exists as a crystalline adduct of Et2O, which upon treatment with ZrCl4 affords the desired product with high yield. Comps. I have high catalytic activity and stereoselectivity in polymerization reactions as mixts. of rac (active) and meso (inactive) forms. In an example, lithiation of 2-ethyl-4-phenylindene (preparation given) with BuLi and subsequent silylation with 1,1-dichloro-2,5-dihydrosilole gave nearly quant. the bidentate ligand 1,1-bis(2-ethyl-4-phenyl-1-yl)-2,5-dihydrosilole which formed 70% of a crystalline salt-Et2O adduct upon dilithiation; treating the latter with ZrCl4 in PhMe gave 67% I (R1 = Et, R2 = Ph) as a 2:1 mixture of rac and meso isomers, and these demonstrated improved catalytic activity in the polymerization of propylene over known zirconocene catalysts.

L9 ANSWER 3 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN
 AN 2001:924328 CAPLUS
 DN 136:38057
 TI Metallocene compound, olefin **polymerization catalyst** containing the compound, and method for producing an olefin polymer by use of the **catalyst**
 IN Nakano, Masato; Ushioda, Tsutomu; Yamazaki, Hiroshi; Uwai, Toshihiro; Kimura, Masami; Ohgi, Yoshiyuki; Yamamoto, Kiyomi
 PA Chisso Corporation, Japan

SO U.S. Pat. Appl. Publ., 26 pp.

CODEN: USXXCO

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2001053833	A1	20011220	US 2001-861726	20010522 <--
	US 6846943	B2	20050125		
	JP 2002047313	A2	20020212	JP 2000-321373	20001020
	JP 2002128832	A2	20020509	JP 2000-321376	20001020
	JP 2002194016	A2	20020710	JP 2001-149062	20010518
	DE 10125356	A1	20020124	DE 2001-10125356	20010523
PRAI	JP 2000-151673	A	20000523		
	JP 2000-151674	A	20000523		
	JP 2000-321373	A	20001020		
	JP 2000-321374	A	20001020		
	JP 2000-321376	A	20001020		

AB A metallocene compound useful as **catalyst** for manufacturing of polyolefins with high mol. weight and high stereoregularity has the following formula: Q(C₅H₄-m R_{1m})(C₅H₄-n R_{2n})MXY wherein (C₅H₄-m R_{1m}) and (C₅H₄-n R_{2n}) each independently represent a cyclopentadienyl group; C₅H₄-m and C₅H₄-n each independently represent a cyclopentadienyl ring; m represents an integer of 1-3; n represents an integer of 2 or 3; R₁ and R₂ are each independently a substituent bonded resp. to C₅H₄-m and C₅H₄-n, and represent a hydrocarbon group of 1-20 carbon atoms, a silicon-containing hydrocarbon group of 1-20 carbon atoms or a heteroarom. group; each R_{1m} and each R_{2n} may be the same or different; one pair of R₂'s in the R_{2n} are bonded to each other to form at least one ring; Q represents a divalent group for crosslinking (C₅H₄-m R_{1m}) and (C₅H₄-n R_{2n}); M represents a titanium atom, a zirconium atom or a hafnium atom; and X and Y are the same or different and each a hydrogen atom, a halogen atom or a hydrocarbon group. Thus, propylene was introduced under 0.3 MPa to a mixture of 1L toluene solution containing methylaluminumoxane-rac and 3 mL rac-dimethylsilylene bis(2-(2-(5-methyl)furyl)indenyl)zirconium dichloride-toluene solution and polymerized for 1 h to give 8.7 g propylene homopolymer having melt flow rate 0.004 g/10 min, isotactic pentad ratio 0.928, isotactic triad ratio 0.946, weight-average mol. weight 1.61 + 10⁶ g/mol, Mw/Mn 3.0, and m.p. 146.2°.

RE.CNT 43 THERE ARE 43 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 4 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2001:895658 CAPLUS

DN 136:38042

TI Transition metal compound **catalyst** component for
polymerization of aromatic vinyl compound and/or olefin for
(co)polymer having stereoregularity, and its preparation

IN Arai, Toru; Otsu, Toshiaki; Suzuki, Shigeru; Nakajima, Masataka

PA Denki Kagaku Kogyo Kabushiki Kaisha, Japan

SO U.S., 87 pp., Cont.-in-part of U.S. 6,235,855.

CODEN: USXXAM

DT Patent

LA English

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6329479	B1	20011211	US 1999-390711	19990907 <--
	US 6235855	B1	20010522	US 1998-48000	19980326 <--
	US 2001051699	A1	20011213	US 2001-779098	20010208 <--
	US 6489424	B2	20021203		
PRAI	JP 1997-100527	A	19970417		
	JP 1997-100528	A	19970417		
	US 1998-48000	A2	19980326		
	JP 1997-100529	A	19970417		
	JP 1997-232084	A	19970828		

OS MARPAT 136:38042

AB A transition metal compound **catalyst** component is based on Zr, Hf, or Ti bonded to methylene or B bridged (un)substituted

cyclopentaphenianthryl groups.

RE.CNT 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 5 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2001:890791 CAPLUS
DN 136:184187
TI The influence of the **polymerization** process on the product
properties of metallocene-polypropene
AU Kaminsky, Walter; Arrowsmith, David; Laban, Andre; Lemstra, Piet J.; Loos,
Joachim; Weingarten, Ulrich
CS Chemie, Universitat Hamburg, Hamburg, D-20146, Germany
SO Chemical Engineering & Technology (2001), 24(11), 1124-1128
CODEN: CETEER; ISSN: 0930-7516
PB Wiley-VCH Verlag GmbH
DT Journal
LA English
AB Metallocene, e.g., rac-[Me₂Si(2-Me-4-(1-naphthyl)ind)₂]ZrCl₂ (ind =
indene) and Me aluminoxane (MAO) catalysts are efficient tools in
the solution polymerization of olefins. They show very high activities to tailor
the polyolefins in respect to microstructure, melting temperature and molar
mass. After heterogenization of these metallocene/MAO catalysts they can
excellently be adapted to existing slurry and gas phase processes. The
polyolefins produced by heterogenized metallocene/MAO catalysts are
distinguished by the fact that their morphol. can be tuned by the carrier
material. The carrier material acts as a template, with the morphol. of
the polyolefins deriving from replicates of the original shape of the
carrier being used.

RE.CNT 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 6 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2001:875258 CAPLUS
DN 136:6547
TI Furyl- or thienyl-substituted bridged ansa metallocene catalysts for
olefin **polymerization**
IN Mitani, Seiki; Nakano, Masato; Saito, Jun; Yamazaki, Hiroshi; Kimura,
Keisuke
PA Chisso Corporation, Japan
SO U.S., 40 pp., Cont.-in-part of U.S. 6,169,051.
CODEN: USXXAM

DT Patent
LA English

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	US 6326493	B1	20011204	US 1999-449638	19991130 <--
	US 6169051	B1	20010102	US 1999-236322	19990125 <--
	WO 2000043406	A1	20000727	WO 2000-JP287	20000121 <--
	W: CN, JP, KR				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	EP 1066300	A1	20010110	EP 2000-900864	20000121 <--
	EP 1066300	B1	20030820		
	R: BE, DE, FR				
	JP 2002535339	T2	20021022	JP 2000-594822	20000121
	JP 3674509	B2	20050720		
PRAI	US 1999-236322	A2	19990125		
	US 1999-449638	A	19991130		
	WO 2000-JP287	W	20000121		

OS MARPAT 136:6547

AB A series of dimethylsilyl-bridged biscyclopentadienyl or bisindenyl group
IV metal complexes with furyl- or thienyl- substituents on the rings were
synthesized and used as catalysts for the polymerization of olefins, particularly
achieving a very high effect in making high-mol.-weight polypropylene. Thus,
propylene was polymerized in the presence of 0.62x10⁻³ mmol
rac-dimethylsilylenebis[2-(2-furyl)-3,5-dimethylcyclopentadienyl]zirconium
dichloride and methylaluminoxane at 30° for 1 h to yield 42.7 g of
polypropylene having Mw 4.83x10⁵ and Mww/Mn 1.91.

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 7 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2001:713474 CAPLUS
DN 135:273665
TI Thermoplastic compositions of isotactic propylene polymers and flexible
 propylene polymers having reduced isotacticity and a process for the
 preparation thereof
IN Resconi, Luigi; Ferraro, Angelo; Baruzzi, Giovanni
PA Basell Technology Company B.V., Neth.
SO PCT Int. Appl., 40 pp.
 CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001070878	A1	20010927	WO 2001-EP2786	20010312 <--
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,				
	CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR,				
	HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT,				
	LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU,				
	SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN,				
	YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,				
	DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF,				
	BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	CA 2374007	AA	20010927	CA 2001-2374007	20010312 <--
	AU 2001056203	A5	20011003	AU 2001-56203	20010312 <--
	EP 1187877	A1	20020320	EP 2001-929430	20010312
	EP 1187877	B1	20040714		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,				
	IE, SI, LT, LV, FI, RO				
	BR 2001005938	A	20020326	BR 2001-5938	20010312
	TR 200103338	T1	20020722	TR 2001-200103338	20010312
	JP 2003528195	T2	20030924	JP 2001-569067	20010312
	ES 2223832	T3	20050301	ES 2001-1929430	20010312
	US 2002198336	A1	20021226	US 2001-979471	20011120
	US 6620888	B2	20030916		
PRAI	EP 2000-201056	A	20000322		
	WO 2001-EP2786	W	20010312		

OS MARPAT 135:273665

AB The compns., showing improved balance of pliability-mech. properties,
 comprise: (A) 10-99% a propylene-based polymer having isotactic triads
 (mm) 50-85 and Tm 60-120°, optionally containing 0.1-5 mol units (U)
 from monoolefin CH₂=CHR with R=H, C₂-20 alkyl or a C₆-12 aryl, and (B)
 1-90% a essentially isotactic polypropylene having Tm >153°,
 optionally also containing from 0.1-5 mol U, wherein the ratios of A/B are
 30:70-95:5, and A and B are manufactured in the presence of metallocene, or
 halogen-containing metallocene polymerization catalysts.

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

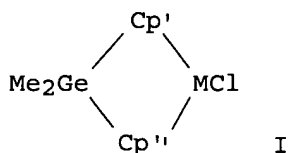
L9 ANSWER 8 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2001:584636 CAPLUS
DN 135:318745
TI C2-symmetric zirconocenes for high molecular weight amorphous
 poly(propylene)
AU Balboni, Davide; Moscardi, Gilberto; Baruzzi, Giovanni; Braga, Vittorio;
 Camurati, Isabella; Piemontesi, Fabrizio; Resconi, Luigi; Nifant'ev, Ilya
 E.; Venditto, Vincenzo; Antinucci, Simona
CS Basell Polyolefins, Centro Ricerche G. Natta, Ferrara, 44100, Italy
SO Macromolecular Chemistry and Physics (2001), 202(10), 2010-2028
 CODEN: MCHPES; ISSN: 1022-1352
PB Wiley-VCH Verlag GmbH
DT Journal
LA English
AB Details of the preparation and polymerization behavior of two chiral zirconocene

catalysts are presented. The results of exptl. and mol.-mechanics evaluation of their stereoselectivity with respect to liquid-propene polymerization are compared with those of a related **catalyst** system. The elastic properties of the obtained amorphous poly(propylene), due to the presence of small γ -form crystallites, are compared with those of a high-mol. weight atactic poly(propylene) obtained in the presence of a C2v **catalyst**.

RE.CNT 48 THERE ARE 48 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 9 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2001:524027 CAPLUS
DN 135:93011
TI Cyclic germanium-bridged metallocene catalysts for polymerization of olefins
IN Xu, Shansheng; Zhou, Xiuzhong; Wang, Baiquan; Dai, Xuliang
PA China Petrochemical Corp., Peop. Rep. China
SO Faming Zhuanli Shenqing Gongkai Shuomingshu, 8 pp.
CODEN: CNXXEV
DT Patent
LA Chinese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	CN 1276387	A	20001213	CN 2000-109698	20000622 <--
PRAI	CN 2000-109698		20000622		
GI					



AB The cyclic germanium bridged metallocene compound I (M = Ti or Zr; Cp' = 2,3,4,5-tetramethylcyclopentadienyl (Cp), tert-Bu-Cp, indenyl, 2-methylindenyl, 2-methyl-4-phenylindenyl; Cp'' = Cp, 2,3,4,5-tetramethyl-Cp, tert-Bu-Cp, indenyl, 2-methylindenyl, 2-methyl-4-phenylindenyl) is useful as **catalyst** for polymerization of ethylene or propylene. Thus, ethylene was polymerized in the presence of I (M = Zr, Cp', Cp'' = 2-methylindenyl) with MAO **catalyst** at 20° to give a polymer having Mw/Mn 2.39 and **catalyst** activity 3.38 kgPE/mmolZr-h.

L9 ANSWER 10 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2001:489502 CAPLUS
DN 135:93013
TI Unsymmetrical, bridged metallocenes having fused cyclopentadiene ring derivatives for catalysts for homo- and copolymerization of propylene
IN Schottek, Joerg; Oberhoff, Markus; Bingel, Carsten; Fischer, David; Weiss, Horst; Winter, Andreas; Fraaije, Volker
PA Basell Polyolefine GmbH, Germany
SO PCT Int. Appl., 111 pp.
CODEN: PIXXD2
DT Patent
LA German
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001048034	A2	20010705	WO 2000-EP12642	20001213 <--
	WO 2001048034	A3	20020620		
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN,				

YU, ZA, ZW

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,
DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF,
BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

DE 19962905	A1	20010712	DE 1999-19962905	19991223 <--
CA 2395552	AA	20010705	CA 2000-2395552	20001213 <--
EP 1250365	A2	20021023	EP 2000-988791	20001213
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
BR 2000016723	A	20030218	BR 2000-16723	20001213
JP 2003533550	T2	20031111	JP 2001-548572	20001213
CN 1590355	A	20050309	CN 2004-10063702	20001213
CN 1590422	A	20050309	CN 2004-10063703	20001213
EP 1548037	A2	20050629	EP 2005-1432	20001213
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY, TR				
EP 1548022	A2	20050629	EP 2005-1433	20001213
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY, TR				
EP 1548023	A2	20050629	EP 2005-1434	20001213
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY, TR				
AU 782996	B2	20050915	AU 2001-25110	20001213
RU 2276671	C2	20060520	RU 2002-120465	20001213
ZA 2002005003	A	20030623	ZA 2002-5003	20020621
US 2003149199	A1	20030807	US 2002-168952	20020624
AU 2005201073	A1	20050407	AU 2005-201073	20050310
US 2006020096	A1	20060126	US 2005-131251	20050518

PRAI DE 1999-19962905 A 19991223
DE 2000-10044983 A 20000911
AU 2001-25110 A3 20001213
CN 2000-818742 A3 20001213
EP 2000-988791 A3 20001213
WO 2000-EP12642 W 20001213
US 2002-168952 A3 20020624

OS MARPAT 135:93013

AB Unsym. metallocenes having ligands with aromatic rings fused to cyclopentadienyl ring, bridging groups between the cyclopentadienyl rings, and different substituents on the 2 and 4 positions of the 2 different halves of the ligands give catalysts with increased activity in the polymerization of propylene and provide propylene copolymers with increased content of comonomer and ≥ 4 regiodefects/chain. A typical **catalyst** was manufactured by reaction of Grignard derivative of iso-BuBr with 2-chlorobenzonitrile, cyclization of the resulting o-ClC₆H₄COCH₂CHMe₂ with urotropin in the presence of Ac₂O, coupling of the 2-isopropyl-7-chloro-1-indanone with 4-tert-butylphenylboronic acid, reduction of the resulting 2-isopropyl-7-(tert-butylphenyl)-1-indanone with NaBH₄, reaction of the lithiated resulting 2-isopropyl-4-(tert-butylphenyl)-1-indene with 2-methyl-4-(4-tert-butylphenyl)-1-indenyldimethylchlorosilane, and complexation of the latter intermediate with ZrCl₄.

L9 ANSWER 11 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2001:489410 CAPLUS

DN 135:93012

TI Heterocyclic metallocene compounds and use thereof in **catalyst** systems for producing olefin polymers

IN Nifant'ev, Ilya E.; Guidotti, Simona; Resconi, Luigi; Laishevtsev, Ilya P.

PA Basell Technology Company B.V., Neth.

SO PCT Int. Appl., 126 pp.

CODEN: PIXXD2

DT Patent

LA English

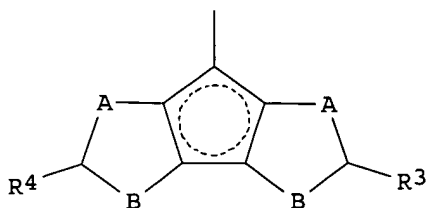
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001047939	A1	20010705	WO 2000-EP13191	20001222 <--
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR,					

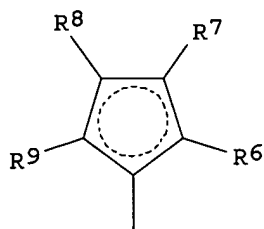
HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT,
LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU,
SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN,
YU, ZA, ZW

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,
DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF,
BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

CA 2363265 AA 20010705 CA 2000-2363265 20001222 <--
AU 2001028433 A5 20010709 AU 2001-28433 20001222 <--
AU 783097 B2 20050922
EP 1157027 A1 20011128 EP 2000-993614 20001222 <--
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
IE, SI, LT, LV, FI, RO
BR 2000010277 A 20020115 BR 2000-10277 20001222
JP 2003519156 T2 20030617 JP 2001-549409 20001222
RU 2243229 C2 20041227 RU 2001-126356 20001222
ZA 2001006825 A 20021118 ZA 2001-6825 20010817
US 2003036612 A1 20030220 US 2001-914304 20010827
PRAI EP 1999-204567 A 19991228
WO 2000-EP13191 W 20001222
OS MARPAT 135:93012
GI



I



II

AB The title metallocene compds. comprise LGZMXp, wherein L is a divalent group, Z is I, wherein R3 and R4 are selected from hydrogen and hydrocarbon groups; A and B are selected from S, O or CR5, wherein R5 is selected from hydrogen and hydrocarbon groups, either A or B being different from CR5; G is a II, wherein R6, R7, R8 and R9 are selected from hydrogen and hydrocarbon groups, M is an atom of a transition metal, X is selected from a halogen atom, a R10, OR10, OSO2CF3, OCOR10, SR10, NR102 or PR102 group, wherein the substituents R10 is hydrogen and a hydrocarbon group; p is an integer from 0 to 3. Propylene was polymerized using a catalyst system containing isopropylidene[(3-methyl-cyclopentadienyl)-7-(2,5-dimethyl-cyclopenta[1,2-b:4,3-b']-dithiophene)]zirconium dichloride and Me aluminoxane in the presence of iso-Bu3Al.

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 12 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2001:98462 CAPLUS
DN 134:148009
TI Transition metal complexes, ligands, and catalysts for the
polymerization of olefins
IN Schottek, Jorg; Schauer, Diana; Kratzer, Roland
PA Targor G.m.b.H., Germany
SO Eur. Pat. Appl., 38 pp.
CODEN: EPXXDW
DT Patent
LA German
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1074557	A2	20010207	EP 2000-113891	20000630 <--
	EP 1074557	A3	20030226		
	R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO			

US 6627764	B1	20030930	US 2000-614121	20000711
JP 2001072695	A2	20010321	JP 2000-231115	20000731 <--
PRAI DE 1999-19936185	A	19990731		

OS MARPAT 134:148009

AB The title catalysts, with high activity in heterogeneous polymerization, are metallocenes of Group IIIB, IVB, VB, or VIB metals bearing specified substituents on the cyclopentadiene rings. Adding a solution of 35.2 mmol each **indene** and BuLi in PhMe over 1 h to 35.2 mmol 2-methyl-4-(4-tert-butylphenyl)-1-dimethylchlorosilanindene (prepared in 98% yield from 2-methyl-4-(4-tert-butylphenyl)**indene**, BuLi, and Me₂SiCl₂) in PhMe at room temperature and stirring overnight gave 98% dimethylsilanediyl(2-methyl-4-(4-tert-butylphenyl)**indene**), reaction of which (13.8 mmol) with 27.6 mmol BuLi and then with 13.8 mmol ZrCl₄ in Et₂O gave 85% zirconocene. Use of the metallocenes in the heterogeneous polymerization of C₃H₆ is exemplified.

L9 ANSWER 13 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2000:635052 CAPLUS

DN 133:223606

TI Antistatic resin compositions and their articles

IN Nishitoba, Yukiko; Oda, Takeshi; Arai, Akira

PA Denki Kagaku Kogyo K. K., Japan

SO Jpn. Kokai Tokkyo Koho, 25 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000248135	A2	20000912	JP 1999-56921	19990304 <--
PRAI	JP 1999-56921		19990304		

OS MARPAT 133:223606

AB The compns., for films, sheets, or moldings, contain 100 parts resins containing ≥5% 1-99:1-99 (by mol) aromatic vinyl compound-α-olefin random copolymers, 0.01-20 parts antistatic agents, 0.01-5 parts alkylenebis(saturated higher fatty acid amides), and optionally 0.01-10 parts (in)organic electrolytes. Thus, 100 parts isotactic 95:5 (mol%) ethylene-styrene random copolymer prepared with (iso-Bu)₃Al, Me alumoxane, and rac-dimethylmethylenebis(4,5-benzo-1-indenyl)zirconium dichloride (preparation given) was kneaded with Torlon 4275 (polyamide-polyimide elastomer) 1.0, MB 400 (stearic acid monoglyceride) 0.05, SE 165 (stearyldiethanolamine) 0.05, Slipacks E [ethylenebis(stearamide)] 0.1, and Na dodecylbenzenesulfonate 0.1 part and extruded into a blown film showing surface resistivity 2 + 10¹¹ Ω and good antiblocking properties.

L9 ANSWER 14 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2000:594285 CAPLUS

DN 133:322171

TI C2-symmetric zirconocenes for high molecular weight amorphous polypropylene

AU Balboni, D.; Moscardi, G.; Nifant'ev, I.; Baruzzi, G.; Angeli, D.; Resconi, L.

CS Centro Ricerche G. Natta, Montell Polyolefins, Ferrara, 44100, Italy

SO Polymer Preprints (American Chemical Society, Division of Polymer Chemistry) (2000), 41(2), 1920-1921

CODEN: ACPPAY; ISSN: 0032-3934

PB American Chemical Society, Division of Polymer Chemistry

DT Journal

LA English

AB We have reported new examples of chiral C₂-sym. zirconocenes of low stereoselectivity. Zirconocenes, upon activation with Me aluminoxane, produce amorphous polypropylenes with acceptable mol. wts. at practical polymerization temps. and mmmm pentad values between 15 and 30 %. Non-bonded interaction anal. by Mol. Mechanics accounts for the low enantioselectivity of these zirconocenes, and predicts the isospecificity of the rac-H₂C(2-Me-3-iPr-1-Ind)ZrR' catalyst. Interestingly, while polypropylene from zirconocene/MAO is fully amorphous, the polypropylene from another zirconocene/MAO has elastomeric properties at

room temperature and, upon ageing, develops some crystallinity. The properties of these materials are being actively investigated. These zirconocenes can be prepared in three steps from inexpensive starting materials. These complexes are simpler in their synthesis compared to the Cl-sym. metallocenes previously reported for the production of similar polypropylene materials.

RE.CNT 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 15 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2000:535190 CAPLUS

DN 133:164481

TI Metallocenes containing ligands having heterocyclic rings for supported catalysts for **polymerization** of olefins

IN Schottek, Jorg; Kratzer, Roland; Winter, Andreas; Fraaije, Volker; Brekner, Michael-Joachim; Oberhoff, Markus

PA Targor G.m.b.H., Germany

SO PCT Int. Appl., 76 pp.

CODEN: PIXXD2

DT Patent

LA German

FAN.CNT 5

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000044799	A1	20000803	WO 2000-EP471	20000122 <--
	W: BR, JP, US				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	DE 19903306	A1	20000803	DE 1999-19903306	19990128 <--
	BR 2000004493	A	20001219	BR 2000-4493	20000122 <--
	EP 1082363	A1	20010314	EP 2000-910601	20000122 <--
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
	JP 2002535416	T2	20021022	JP 2000-596054	20000122
	US 6469114	B1	20021022	US 2000-646176	20000914
PRAI	DE 1999-19903306	A	19990128		
	WO 2000-EP471	W	20000122		

OS MARPAT 133:164481

AB Metallocenes of Group IVB metals and containing **indene** derivative ligands bridged to bicyclic ligands having cyclopentadiene and heterocyclic rings containing ≥ 1 atom of Group IIIA, IVA, VA, or VIA are useful as supported catalysts for polymerization of olefins to give polymers with high m.p. and increased mol. weight A typical metallocene was manufactured by lithiation of dimethylsilanediyl(2-methyl-4-thiapentalene)[2-methyl-4-(4-tert-butylphenyl)**indene**] with BuLi and complexation with $ZrCl_4$.

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 16 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2000:428015 CAPLUS

DN 133:59220

TI Binuclear metallocene catalysts for **polymerization** of olefins to give single or bimodal molecular distribution

IN Tsai, Ching cheng; Liu, Mo kai; Seng, Shu hua; Wang, Hsien chih; Yang, Mu chen; Ting, Ching; Hua, Shou hsu

PA Industrial Technology Research Institute, Japan; Chinese Petroleum Corporation; Taiwan Synthetic Rubber Corporation

SO Jpn. Kokai Tokkyo Koho, 11 pp.

CODEN: JKXXAF

DT Patent

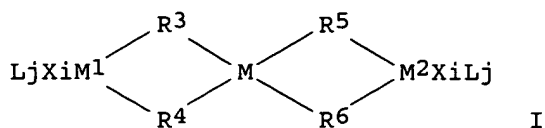
LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000178292	A2	20000627	JP 1998-355952	19981215 <--
PRAI	JP 1998-355952		19981215		

OS MARPAT 133:59220

GI



AB Metallocene complexes I [R3-R6 = (un)substituted cyclopentadienyl; M = group 4; M1, M2 = group 3, 4, or 5 element; X = monovalent anion selected from H, C1-20 hydrocarbyl, halo, C1-20 alkoxy, C1-20 oxyallyl, NH2, etc.; L = amine, P compound, ether, thioether; i = 1-3; j = 0-1; i + j ≤ 3] are manufactured Thus, ethylene was polymerized in the presence of Sn(Cp')Cp3Zr2(NMe2)4 (Cp' = η5-methylcyclopentadienyl, Cp = η5-cyclopentadienyl) [prepared from Cp'Li, SnCl4, and Zr2(NMe2)4] and methylaluminoxane to give a polymer having mol. distribution 3.6 and catalyst activity 2.33 + 104 g/g-catalyst-h.

L9 ANSWER 17 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2000:302200 CAPLUS

DN 132:309176

TI Aromatic vinyl-α-olefin random copolymer compositions, and moldings and sealants using them

IN Suzuki, Shigeru; Oda, Takeshi; Honda, Toshio; Arai, Akira

PA Denki Kagaku Kogyo K. K., Japan

SO Jpn. Kokai Tokkyo Koho, 21 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000129043	A2	20000509	JP 1998-301802	19981023 <--
PRAI	JP 1998-301802		19981023		
OS	MARPAT 132:309176				

AB The compns. contain ≥2 kinds of aromatic vinyl-α-olefin random copolymers having difference in ≥1 of the following properties: (1) compns.: ≥2 mol% difference in the content of aromatic vinyl compds., (2) mol. wts.: ≥10% difference in Mw, (3) mol. weight distributions: ≥0.1 difference in Mw/Mn, and/or (4) thermal properties: ≥0.5 J/g difference in the endothermic peaks at 0-180° in DSC. Thus, styrene was polymerized with ethylene in the presence of (iso-Bu)3Al, methylalumoxane, and rac-dimethylmethylenebis(4,5-benzo-1-indenyl)zirconium dichloride (preparation given) to give ethylene-styrene random copolymer (I) (styrene content 26 mol%, isotactic dyad fraction >0.95, Mw/Mn 2.2, DSC peak 3.8 J/g at 44.1°), 70 parts of which was kneaded with 30 parts I (styrene content 10 mol%, isotactic dyad fraction >0.95, Mw/Mn 2.3, DSC peak 35.1 J/g at 65.5°) to give a composition showing tensile modulus 8 MPa, elongation at break 500%, haze 90%, and Shore D hardness 21.

L9 ANSWER 18 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2000:267240 CAPLUS

DN 132:294870

TI Electrically insulating resin compositions

IN Suzuki, Shigeru; Oda, Takeshi; Arai, Toru

PA Denki Kagaku Kogyo K. K., Japan

SO Jpn. Kokai Tokkyo Koho, 18 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000119456	A2	20000425	JP 1998-295119	19981016 <--
PRAI	JP 1998-295119		19981016		

AB Title compns. contain ≥5% of olefin-aromatic vinyl compound copolymers.

Polymerizing C₂H₄ and styrene (I) in the presence of Al(iso-Bu)₃, Me aluminoxane, and rac-dimethylmethylenebis(4,5-benzo-1-indenyl) ZrCl₂ gave a 24.5 mol% I-containing polymer, 100 parts of which was kneaded with 0.1 part Irganox 1010 to form a composition with resistivity 5 + 10¹⁵ Ω-cm, elongation 810%, and Shore A hardness 67. The above composition was used to form an elec. insulator having high flexibility and adhesion.

L9 ANSWER 19 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2000:267201 CAPLUS

DN 132:309390

TI Random copolymers of aromatic vinyl compounds with α-olefins for building materials

IN Oda, Takeshi; Naoe, Takanori; Suzuki, Shigeru; Arai, Toru

PA Denki Kagaku Kogyo K. K., Japan

SO Jpn. Kokai Tokkyo Koho, 23 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000119339	A2	20000425	JP 1998-295121	19981016 <--
PRAI	JP 1998-295121		19981016		

OS MARPAT 132:309390

AB Building materials contain 0-95% fillers and fireproofing agents and 5-100% title copolymers containing 1-99.9 mol% aromatic vinyl compds. and having head-to-tail chain structures for units of ≥2 aromatic vinyl compds. Thus, a polymer was prepared from styrene and ethylene using iso-Bu₃Al, Me aluminoxane, and rac-isopropylidenebis(4,5-benzo-1-indenyl)zirconium dichloride as catalysts.

L9 ANSWER 20 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2000:266176 CAPLUS

DN 132:280235

TI Transparent multilayer olefin polymer films and containers therefrom

IN Nishitoba, Yukiko; Ota, Takeshi; Naoe, Takanori; Arai, Toru

PA Denki Kagaku Kogyo K. K., Japan

SO Jpn. Kokai Tokkyo Koho, 22 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000117914	A2	20000425	JP 1998-295122	19981016 <--
PRAI	JP 1998-295122		19981016		

AB The films, useful for stretchable, shrinkable, gas-barrier, and heat-sealable packaging materials, have ≥1 layer(s) from resin compns. containing ≥5% aromatic vinyl-α-olefin random copolymers (aromatic vinyl content ≥1 and <99.9 mol%) having ≥2 head-to-tail linkages of aromatic vinyl units. Thus, styrene was polymerized with ethylene in the presence of (iso-Bu)₃Al, methylalumoxane, and rac-dimethylmethylenebis(4,5-benzo-1-indenyl)zirconium dichloride (preparation given) to give a random copolymer (styrene content 4.8 mol%, isotactic dyad fraction >0.95, Mw/Mn 2.0), which was sandwiched between EVA (NUC 3753) and extruded to give a 30 μm-thick 3-layer film showing haze 6.7% (thickness 0.5 mm) and good breaking strength and tensile modulus in the machine and transverse directions.

L9 ANSWER 21 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2000:175548 CAPLUS

DN 132:208304

TI Aromatic vinyl compound-ethylene copolymer and its manufacture

IN Arai, Toru; Otsu, Toshiaki; Nakajima, Masataka

PA Denki Kagaku Kogyo Kabushiki Kaisha, Japan

SO Eur. Pat. Appl., 35 pp.

CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 985689	A1	20000315	EP 1999-117558	19990906 <--
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 2000143733	A2	20000526	JP 1999-251127	19990906 <--
	CN 1247196	A	20000315	CN 1999-118821	19990907 <--
PRAI	JP 1998-252222	A	19980907		
	JP 1998-254907	A	19980909		
AB	An aromatic vinyl compound-ethylene copolymer (styrene-ethylene copolymer) has the following features: (1) an aromatic vinyl compound content is from 1-99 mol%, (2) an aromatic vinyl compound unit-ethylene unit alternating structure has a stereoregularity having an isotactic diad index of at least 0.75; and (3) even after sufficiently subjecting to crystallization, a crystallinity derived from an aromatic vinyl compound-ethylene alternating structure is not observed. The copolymer is manufactured by polymerization using metallocene catalysts.				
RE.CNT	9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT				

L9 ANSWER 22 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2000:175538 CAPLUS

DN 132:223044

TI Dinuclear metallocene catalyst for olefin polymerization

IN Tsai, Jing C.; Liu, Kuang-kai; Chan, Shui-hwa; Wang, Shian-ji; Young, Mu-jen; Ting, Chin; Hua, Sung-song

PA Industrial Technology Research Institute, Taiwan; Chinese Petroleum Corporation; Taiwan Synthetic Rubber Corporation

SO Eur. Pat. Appl., 15 pp.

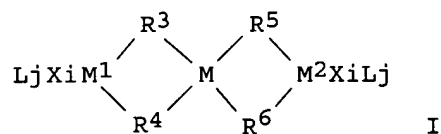
CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 985677	A1	20000315	EP 1998-116848	19980907 <--
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
PRAI	EP 1998-116848		19980907		
OS	MARPAT 132:223044				
GI					



AB A novel dinuclear Group IV element-bridged metallocene complex is disclosed which is represented by I: wherein R3, R4, R5, and R6 are the same or different and each of R3, R4, R5, and R6 is independently a cyclopentadienyl group or a substituted cyclopentadienyl group, M is a Group IV element, M1 and M2 are the same or different and are independently selected from the group consisting of a Group 3, Group 4, and Group 5 transition metal, X is the same or different and is an anion with -1 valence, L is a neutral coordinating group, i is an integer of 1 to 3, j is 0 or 1, and i + j ≤ 3. When employing the dinuclear metallocene complex to prepare an olefin polymer, since it has identical or different two catalytic sites, a single or bimodal olefin polymer can be obtained. In addition, when employing the dinuclear metallocene complex to prepare a EPDM, since the angle of the (Cp-centroid)-metal-(Cp-centroid) is smaller, the non-conjugated diene has a larger relative reactivity, thus saving the total production cost of the EPDM.

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 23 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN
 AN 2000:117009 CAPLUS
 DN 132:166732
 TI Coupling reactions of 2-substituted, 7-haloindenes with aryl substituents
 to produce metallocene **catalyst** ligands
 IN Sullivan, Jeffrey M.; Barnes, Hamlin H.
 PA Boulder Scientific Co., USA
 SO PCT Int. Appl., 41 pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 FAN.CNT 4

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000007968	A1	20000217	WO 1999-US17519	19990803 <--
	W: AU, CA, JP, NZ, US				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	US 6465700	B1	20021015	US 1998-127796	19980803
	CA 2305363	AA	20000217	CA 1999-2305363	19990803 <--
	AU 9953324	A1	20000228	AU 1999-53324	19990803 <--
	AU 764843	B2	20030904		
	EP 1027314	A1	20000816	EP 1999-938949	19990803 <--
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
	NZ 503655	A	20010928	NZ 1999-503655	19990803 <--
	JP 2002522405	T2	20020723	JP 2000-563603	19990803
PRAI	US 1998-127796	A1	19980803		
	US 1997-795019	A2	19970205		
	WO 1999-US17519	W	19990803		

OS MARPAT 132:166732
 AB Novel 2-substituted 7-haloindenes and methods for synthesizing such
 indenes are described. The 2-substituted 7-haloindenes may be coupled
 with any aryl group to produce a metallocene **catalyst**
 intermediate. 2-Methyl-7-chloroindene was prepared and reacted with
 phenylmagnesium bromide to give 2-methyl-7-phenylindene.
 RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 24 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN
 AN 2000:45906 CAPLUS
 DN 132:208179
 TI rac-[Methylene(3-tert-butyl-1-indenyl)2]ZrCl2: A Simple, High-Performance
 Zirconocene **Catalyst** for Isotactic Polypropene
 AU Resconi, Luigi; Balboni, Davide; Baruzzi, Giovanni; Fiori, Cristina;
 Guidotti, Simona; Mercandelli, Pierluigi; Sironi, Angelo
 CS Centro Ricerche G. Natta, Montell Polyolefins, Ferrara, 44100, Italy
 SO Organometallics (2000), 19(4), 420-429
 CODEN: ORGND7; ISSN: 0276-7333
 PB American Chemical Society
 DT Journal
 LA English
 AB The synthesis and propene polymerization performance of the novel
 rac-[CH2(3-tert-butyl-1-indenyl)2]ZrCl2 (I) and rac-[CH2(3-tert-butyl-1-
 indenyl)2]ZrMe2 (I-Me2) are described. The ligand precursor,
 bis(1-tert-butyl-3-indenyl)methane (L2), is obtained in .apprx.80%
 conversion from the condensation of 3-tert-butylindene and formaldehyde in
 DMF at room temperature and is isolated as a yellow powder by washing with
 pentane. Red I is obtained in 50-60% yield and free from its meso
 stereoisomer by reacting an Et2O solution of the ligand dianion,
 (L2)Li2(Et2O)x, with a slurry of ZrCl4 in either pentane or toluene.
 Yellow I-Me2 is prepared in 90% yield by reaction of I with excess MeMgCl in
 toluene. Alternatively, I-Me2 (contaminated with about 5% of its meso
 isomer) can be obtained directly from the ligand L2, by reacting L2 in
 Et2O with 4 equiv of MeLi and then 1 equiv of ZrCl4 in toluene. Both I
 and I-Me2 are remarkably soluble in pentane (I, .apprx.1.7 g/L; I-Me2,
 .apprx.13 g/L) and toluene (I, .apprx.50 g/L). I/MAO and I-Me2/MAO
 polymerize liquid propene with good activities to highly isotactic (mmmm =
 95-98%), fully regioregular polypropene with medium-high mol. wts.

(.hivin.Mw = 70 000-780 000) and high m.ps. (Tm = 154-163 °C) in the Tp range 30-70 °C. The behavior of I is compared to that of the prototypical Montell zirconocene rac-[Me2C(3-t-Bu-Ind)2]ZrCl2 (II). I is the first example of a highly efficient and at the same time simple and inexpensive zirconocene **catalyst** for isotactic polypropene. The mol. structures of I and its Hf analog were determined and compared to that of II.

RE.CNT 35 THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 25 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2000:34912 CAPLUS

DN 132:93798

TI Process for the preparation of amorphous α -olefin polymers and compositions containing them and process for the preparation of bridged ligand

IN Resconi, Luigi; Moscardi, Gilberto; Silvestri, Rosanna; Balboni, Davide

PA Montell Technology Company BV, Neth.

SO PCT Int. Appl., 44 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000001738	A2	20000113	WO 1999-EP4548	19990701 <--
	WO 2000001738	A3	20000413		
	W: AU, BR, CA, CN, HU, IL, IN, JP, KR, MX, RU, SG, US, ZA				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	CA 2302287	AA	20000113	CA 1999-2302287	19990701 <--
	AU 9949040	A1	20000124	AU 1999-49040	19990701 <--
	EP 1017729	A2	20000712	EP 1999-932774	19990701 <--
	EP 1017729	B1	20050914		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
	SG 85238	A1	20011219	SG 2001-200102300	19990701 <--
	JP 2002519484	T2	20020702	JP 2000-558138	19990701
	AT 304556	E	20050915	AT 1999-932774	19990701
	US 6423796	B1	20020723	US 2000-486881	20000302
	ZA 2000001623	A	20001027	ZA 2000-1623	20000330 <--
	US 2002169260	A1	20021114	US 2002-140469	20020506
	US 2003158356	A1	20030821	US 2002-309509	20021204
	US 6844288	B2	20050118		
PRAI	EP 1998-202226	A	19980702		
	WO 1999-EP4548	W	19990701		
	US 2000-486881	A3	20000302		
	US 2002-140469	A1	20020506		
OS	MARPAT 132:93798				
AB	Amorphous polymers of α -olefins, particularly of propylene, having high mol. wts. and narrow mol. weight distributions, in which the isotactic sequences are more abundant than the syndiotactic ones, can be obtained in high yields at temps. of industrial interest by carrying out the polymerization reaction in the presence of metallocene catalysts comprising particular bridged bis-indenyl compds. substituted in the 3-position on the indenyl groups. The obtained amorphous polymers are particularly useful for the preparation of miscible compns. with substantially isotactic α -olefins. Propylene was polymerized with methylenebis(3-isopropylindenyl)zirconium dichloride and Me aluminoxane catalysts.				

L9 ANSWER 26 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1999:819427 CAPLUS

DN 132:64952

TI Preparation of propylene polymer and composition with transparency, flexibility, and melt flowability

IN Minami, Yutaka; Kijima, Masato; Okamoto, Takuji; Seta, Yasushi; Mogi, Yasuhiro; Ota, Tsuyoshi; Funabashi, Hideo; Kashiwamura, Takashi; Tani, Noriyuki; Kanamaru, Masami; Kakigami, Koji

PA Idemitsu Petrochemical Co., Ltd., Japan; et al.

SO PCT Int. Appl., 345 pp.

CODEN: PIXXD2

DT Patent

LA Japanese

FAN.CNT 4

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9967303	A1	19991229	WO 1999-JP3405	19990625 <--
	W: US				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	JP 11166084	A2	19990622	JP 1998-239872	19980826 <--
	JP 11302474	A2	19991102	JP 1998-302892	19981023 <--
	JP 2000095820	A2	20000404	JP 1999-55025	19990303 <--
	JP 2000281723	A2	20001010	JP 1999-86491	19990329 <--
	EP 1095951	A1	20010502	EP 1999-926823	19990625 <--
	R: DE				
	JP 2000344833	A2	20001212	JP 1999-284607	19991005 <--
	JP 2000355612	A2	20001226	JP 1999-284606	19991005 <--
	US 6906155	B1	20050614	US 2001-719552	20010228
	US 2005043495	A1	20050224	US 2004-855964	20040528
PRAI	JP 1998-179252	A	19980625		
	JP 1998-210115	A	19980724		
	JP 1998-239872	A	19980826		
	JP 1998-302892	A	19981023		
	JP 1999-283	A	19990105		
	JP 1999-55025	A	19990303		
	JP 1999-79694	A	19990324		
	JP 1999-86491	A	19990329		
	JP 1999-93420	A	19990331		
	JP 1999-103996	A	19990412		
	JP 1997-230611	A	19970827		
	JP 1998-39960	A	19980223		
	WO 1999-JP3405	W	19990625		
	US 2001-719552	A3	20010228		

OS MARPAT 132:64952

AB Title composition, useful as substitute for flexible vinyl chloride resin, comprises (A) a propylene homopolymer or a copolymer of propylene with ethylene and/or C4-40 α -olefin, which has isotactic pentad fraction (mmmm fraction) 30-80 mol% or stereoregular index (P) 55-90 mol%, mol. weight distribution (Mw/Mn) <3.5, and intrinsic viscosity $[\eta]$ 0.8-5 dL/g, and is polymerized in the presence of a metallocene **catalyst**, and optionally (B) a nucleating agent >10 ppm. Thus, polypropylene with mmmm fraction = 63.5 mol%, $[\eta]$ = 1.2 dL/g, and Mw/Mn = 1.8 was prepared in the presence of triisobutylaluminum, methylaluminoxane, and (1,2'-ethylene) (2,1'-ethylene)-bis(3-methylindenyl)zirconium dichloride, to give a press-molded test piece with good transparency, internal Haze 14, and tensile modulus 250 MPa.

RE.CNT 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 27 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1999:708457 CAPLUS

DN 131:323051

TI Heterogeneous metallocene catalytic systems for the **polymerization** and copolymerization of α -olefins

IN Munoz-Escalona, Lafuente Antonio; Lafuente Canas, Pilar; Sancho Royo, Jose; Pena Garcia, Begona; Martinez Nunez, Francisca; Martin, Marcos Carlos

PA Repsol Quimica S.A., Spain

SO Eur. Pat. Appl., 42 pp.

CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 953581	A1	19991103	EP 1999-500063	19990426 <--
	EP 953581	B1	20040107		

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
IE, SI, LT, LV, FI, RO

US 2003191013	A1	20031009	US 1999-299539	19990426
AT 257490	E	20040115	AT 1999-500063	19990426
ES 2211013	T3	20040701	ES 1999-500063	19990426
PT 953581	T	20040730	PT 1999-500063	19990426
NO 9901997	A	19991028	NO 1999-1997	19990427 <--
JP 2000136209	A2	20000516	JP 1999-120613	19990427 <--
JP 3394004	B2	20030407		

PRAI EP 1998-500101 A 19980427

OS MARPAT 131:323051

AB Heterogeneous catalysts based on siloxy group-containing metallocenes are useful in manufacture of homo- and copolymers of olefins having good morphol.

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 28 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1999:691133 CAPLUS

DN 131:310949

TI Process for preparation of ethylene- α -olefin copolymers

IN Dall'Occo, Tiziano; Resconi, Luigi

PA Montell Technology Company B.V., Neth.

SO PCT Int. Appl., 39 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9954369	A1	19991028	WO 1999-EP2644	19990413 <--
W: CA, CN, JP, KR, SG, US				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
CA 2294239	AA	19991028	CA 1999-2294239	19990413 <--
EP 991677	A1	20000412	EP 1999-923426	19990413 <--
EP 991677	B1	20040616		
R: BE, DE, ES, FR, GB, IT, NL				
JP 2002505713	T2	20020219	JP 1999-552481	19990413
ES 2221744	T3	20050101	ES 1999-923426	19990413
US 6448350	B2	20020910	US 1999-446191	19991217
US 2002156209	A1	20021024		
PRAI EP 1998-201287	A	19980421		
WO 1999-EP2644	W	19990413		

OS MARPAT 131:310949

AB The copolymers, having high mol. weight, narrow mol. weight distribution, and a very good homogeneous distribution of the comonomer units, can be obtained in high yields at temps. of industrial interest, by carrying out the polymerization reaction in the presence of metallocene catalysts comprising particular bridged bis-indenyl compds. substituted in the 3-position on the indenyl groups. Thus, ethylene and 1-hexene were polymerized in the presence of methylaluminumoxanes and methylenebis(3-isopropyl-1-indenyl)zirconium dichloride.

RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 29 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1999:678290 CAPLUS

DN 131:300504

TI Thermoplastic aromatic vinyl compound-olefin resin compositions with nonstickiness to metals

IN Kushida, Yuichiro; Oda, Takeshi; Arai, Susumu

PA Denki Kagaku Kogyo K. K., Japan

SO Jpn. Kokai Tokkyo Koho, 13 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI JP 11292923 A2 19991026 JP 1998-101350 19980413 <--
PRAI JP 1998-101350 19980413

AB Title compns. are manufactured by dynamic vulcanization of aromatic vinyl compds.-olefin random copolymers having 1-99.9 (<99.9) mol% aromatic vinyl compds. and head-to-tail structure of ≥ 2 aromatic vinyl compound units in the presence of crosslinking agents. Thus, 800 mL styrene and ethylene was polymerized in the presence of (i-Bu)₃Al, methylalminoxane (PMAO), and rac-dimethylmethylenebis(4,5-benzo-1-indenyl)zirconium dichloride to give a copolymer showing Mw/Mn 2.2 and isotactic diad > 0.95. The copolymer was dynamically vulcanized using Percumyl D40 and divinylbenzene, sheeted and kneaded with a 6-in. roll at 100° for 10 min, showing no adhesion to the metal roll.

L9 ANSWER 30 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1999:631194 CAPLUS

DN 131:258439

TI Thermoplastic polymer compositions containing aromatic viny compound-olefin copolymers with good tensile strength and scratch resistance

IN Kushida, Yuichiro; Ota, Takeshi; Arai, Susumu

PA Denki Kagaku Kogyo K. K., Japan

SO Jpn. Kokai Tokkyo Koho, 15 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 11269332	A2	19991005	JP 1998-72944	19980323 <--
PRAI	JP 1998-72944		19980323		
OS	MARPAT 131:258439				

AB Title compns. comprise 5-70% mixts. of (A) crystalline polyolefins and (B) styrene polymers and 30-95% (C) aromatic compound-olefin copolymers, with content of aromatic vinyl compds. 1-99.9 mol% (\neq 99.9), having head-tail structures of ≥ 2 aromatic vinyl compound units. Thus, ethylene and styrene were polymerized in the presence of triisobutylaluminum, PMAO (Me aluminoxane), and rac-dimethylmethylenebis(4,5-benzo-1-indenyl)zirconium dichloride to give a copolymer with isotactic diad of alternating structure >0.95, 60 parts of which was melt kneaded with 20 parts Chisso Polypro K 7730 (ethylene-propylene copolymer) and 20 parts Denka Styrol GP 1 (styrene polymer) and sheeted to give a test piece showing JIS A hardness 69, tensile strength 101 MPa, and good scratch resistance.

L9 ANSWER 31 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1999:549301 CAPLUS

DN 131:185378

TI **Catalyst** system, its preparation and use for **polymerization** of olefins

IN Gores, Markus; Bingel, Carsten; Fritze, Cornelia

PA Targor G.m.b.H., Germany

SO PCT Int. Appl., 35 pp.

CODEN: PIXXD2

DT Patent

LA German

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9942497	A1	19990826	WO 1999-EP958	19990213 <--
	W: BR, CN, JP, KR, US				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
DE	19806918	A1	19990826	DE 1998-19806918	19980219 <--
BR	9907935	A	20001024	BR 1999-7935	19990213 <--
EP	1054911	A1	20001129	EP 1999-904880	19990213 <--
EP	1054911	B1	20030122		
	R: BE, DE, ES, FR, GB, IT, NL, FI				
JP	2002504569	T2	20020212	JP 2000-532449	19990213
ES	2189388	T3	20030701	ES 1999-904880	19990213

US 6350830 B1 20020226 US 2000-622310 20000816
PRAI DE 1998-19806918 A 19980219
WO 1999-EP958 W 19990213

OS MARPAT 131:185378

AB The **catalyst** system, especially useful for isotactic polypropylene manufacture, includes at least a support, a cocatalyst (e.g., an aluminoxane), and a metallocene of a Group IVB-VIB metal having a 1,1'-bridged 4-phenylindene ligand optionally substituted at the 2-position of the **indene** and/or the 4 position of the Ph. The ratio of rac-isomer to meso-isomer of the metallocene ranges between 1:10 and 2:1. Thus, a toluene solution of 0.092 mmol [1,1'-(dimethylsilylene)bis[4-(4-ethylphenyl)-2-methylindenyl]]zirconium dichloride (racemic/meso ratio 1:6) and 20 mmol Me aluminoxane was stirred with 4 g SiO₂ for 10 min and the solvent was evaporated to give a **catalyst** powder. Liquid propylene (10 dm³) containing 0.5 cm³ 20% iso-Bu₃Al solution was mixed with 2 g of the **catalyst** powder and heated at 60° for 1 h to produce 2000 g polypropylene with isotactic triad content >98% and polydispersity 2.5-3.5.

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 32 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1999:516546 CAPLUS

DN 131:299717

TI Simple Route to Bis(3-indenyl)methanes and the Synthesis, Characterization, and **Polymerization** Performance of Selected racemic-Dichloro[methylenebis(Rn-1-indenyl)]-zirconium Complexes

AU Dang, Vu Anh; Yu, Lin-Chen; Balboni, Davide; Dall'Occo, Tiziano; Resconi, Luigi; Mercandelli, Pierluigi; Moret, Massimo; Sironi, Angelo

CS Research & Development Center, Montell Polyolefins, Elkton, MD, 21921, USA

SO Organometallics (1999), 18(19), 3781-3791

CODEN: ORGND7; ISSN: 0276-7333

PB American Chemical Society

DT Journal

LA English

AB A large range of bis(Rn-3-indenyl)methanes was obtained in good to fair yields with the base-catalyzed condensation between formaldehyde and (substituted) indenenes. For example, bis(indenyl)methane and bis(4,7-dimethylindenyl)methane have been synthesized in 70% and 50% yield, resp., from the corresponding indenenes. Typical reaction conditions are as follows: **indene** in DMF or DMSO, 0.5 equiv of CH₂O, 0.2-0.5 equiv of EtONa, room temperature. This process provides an inexpensive and atom-efficient protocol for the synthesis of methylene-bridged ligands, providing a facile entry into methylene-bridged ansa-zirconocenes: MAO-activated C2-sym. rac-dichloro[methylenebis(η⁵-1-indenyl)]zirconium (I) and rac-dichloro[methylenebis(4,7-dimethyl-η⁵-1-indenyl)]zirconium (II) polymerize ethylene to low mol. weight, vinyl-terminated linear polyethylene, and liquid propylene to low mol. weight, low isotacticity polypropylene. The microstructure, mol. weight, and end-group structure of these isotactic polypropylenes (i-PP) are compared to those from rac-[isopropylidenebis(1-indenyl)]ZrCl₂ (III), rac-[ethylenebis(1-indenyl)]ZrCl₂ (IV), rac-[ethylenebis(4,7-dimethyl-1-indenyl)]ZrCl₂ (V), and the silicon-bridged rac-[dimethylsilylbis(1-indenyl)]ZrCl₂ (VI). The mol. structures of I and II were determined and compared to those of III, IV, V, and VI. In liquid monomer at 50 °C, the amount of secondary insertions increases on going from the more open to the more hindered systems. At the same time, there is an increase of the fraction of secondary units undergoing isomerization from the normal 2,1 unit to the 3,1 unit (tetramethylene sequence).

RE.CNT 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 33 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1999:460442 CAPLUS

DN 131:102658

TI **Polymerization catalyst** and process for producing olefin polymer or copolymer wherewith

IN Arai, Toru; Suzuki, Shigeru; Otsu, Toshiaki

PA Denki Kagaku Kogyo Kabushiki Kaisha, Japan

SO PCT Int. Appl., 28 pp.

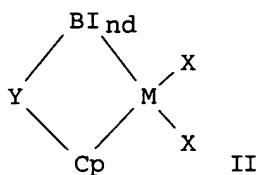
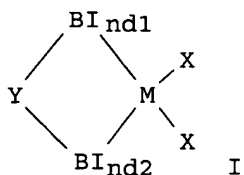
CODEN: PIXXD2

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9933882	A1	19990708	WO 1998-JP5858	19981224 <--
	W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	AU 9916881	A1	19990719	AU 1999-16881	19981224 <--
	EP 1043339	A1	20001011	EP 1998-961518	19981224 <--
	R: DE, FR, GB, IT				
PRAI	JP 1997-357705	A	19971225		
	WO 1998-JP5858	W	19981224		
OS	MARPAT 131:102658				
GI					



AB A polymerization catalysts for (co)polymerization of olefins contains transition metal compds. resp. represented by general formulas (I) and (II); and a process for producing olefin (co)polymers by the catalysts containing a promoter. In the formulas I and II, BInd1, BInd2, BInd each represents optionally substituted benzindenyl; Cp represents optionally substituted cyclopentadienyl, optionally substituted indenyl, or optionally substituted fluorenyl; Y represents a substituted carbon atom; X represents hydrogen, halogeno, etc.; and M represents Zr, Hf, or Ti.

RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 34 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1999:392312 CAPLUS

DN 131:201108

TI Synthesis and properties of elastomeric poly(propylene)

AU Mansel, Stefan; Perez, Ernesto; Benavente, Rosario; Perena, Jose M.; Bello, Antonio; Roll, Werner; Kirsten, Robin; Beck, Stefan; Brintzinger, Hans-Herbert

CS Instituto Ciencia Tecnologia Polimeros, Madrid, E-28006, Spain

SO Macromolecular Chemistry and Physics (1999), 200(6), 1292-1297

CODEN: MCHPES; ISSN: 1022-1352

PB Wiley-VCH Verlag GmbH

DT Journal

LA English

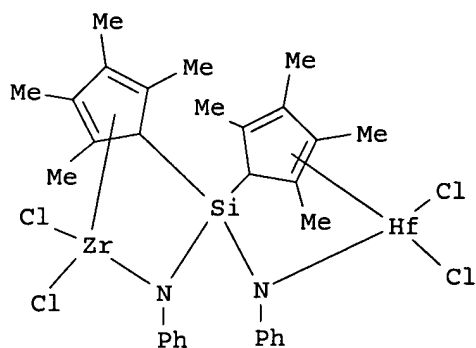
AB Elastomeric poly(propylene) with low percentages of isotactic pentads and high mol. weight was synthesized using unbridged "oscillating" metallocenes. The polymer sample with the highest [mmmm] content (22%) shows a small amount of crystallinity, which is highly influenced by the thermal history, and differs significantly in stress-strain and dynamic mech. properties from all other samples. Polymers with lower isotacticity index, although lacking crystallinity in thermal anal., differ in their viscoelastic behavior from those of atactic poly(propylene). In dynamic mech. anal. the γ relaxation at low temperature shows high sensitivity to low isotactic contents.

RE.CNT 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 35 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN
 AN 1999:227960 CAPLUS
 DN 130:282497
 TI Bridged metallocene catalysts and associated methods of preparation and use for polymerization of olefins and vinyl compounds
 IN Wilson, Robert B., Jr.
 PA SRI International, USA
 SO U.S., 25 pp.
 CODEN: USXXAM
 DT Patent
 LA English
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5892079	A	19990406	US 1997-951949	19971017 <--
	CA 2306986	AA	19990429	CA 1998-2306986	19981016 <--
	WO 9920637	A1	19990429	WO 1998-US21819	19981016 <--
	W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	AU 9898047	A1	19990510	AU 1998-98047	19981016 <--
	EP 1023305	A1	20000802	EP 1998-952320	19981016 <--
	R: DE, FR, GB, IT, NL				
	JP 2001520280	T2	20011030	JP 2000-516978	19981016 <--
	US 6096677	A	20000801	US 1999-247662	19990209 <--
PRAI	US 1997-951949	A	19971017		
	WO 1998-US21819	W	19981016		
OS	MARPAT 130:282497				
GI					



AB Preferred polymer compns. prepared using the catalysts are bimodal or multimodal in nature, typically having a bimodal or multimodal mol. weight distribution. The metallocenes are binuclear or multinuclear based on Group IIIA, Group IVB, Group VA, lanthanide, or actinide metals and contain two or more chemical distinct active sites such as I.
 RE.CNT 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 36 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN
 AN 1999:213813 CAPLUS
 DN 131:5572
 TI A simple, atom-efficient and inexpensive route to bis(1-indenyl) methanes
 AU Dang, Vu Anh; Yu, Lin-Chen; Balboni, Davide; Resconi, Luigi
 CS Research and Development Center, Montell Polyolefins, Elkton, MD, 21921,

USA
 SO Polymeric Materials Science and Engineering (1999), 80, 469-470
 CODEN: PMSEGD; ISSN: 0743-0515
 PB American Chemical Society
 DT Journal
 LA English
 AB The base-catalyzed condensation between formaldehyde and (substituted) indenenes represents a new, inexpensive and atom-efficient protocol for the synthesis of methylene-bridged bis(indenyl) ligands, providing a facile entry into methylene-bridged ansa-zirconocenes: for example, bis(indenyl)methane and bis(4,7-dimethylindenyl)methane were synthesized in 70 % and 50 % yield resp. from the corresponding indenenes. Typical reaction conditions are: **indene** in DMF or DMSO, 0.5 equivalent CH₂O, 0.2-0.5 equivalent EtONa, room temperature The syntheses of pure rac-CH₂(Ind)₂ZrCl₂ and rac-CH₂(4,7-Me₂-Ind)₂ZrCl₂ and their performance in propylene polymerization will be discussed.

RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 37 OF 101 CAPLUS COPYRIGHT 2006 ACS on STM
 AN 1999:205363 CAPLUS
 DN 130:252794
 TI Bridged fluorenyl/indenyl metallocenes and their use in olefin polymerization
 IN Jung, Michael; Alt, Helmut G.; Welch, M. Bruce
 PA Germany
 SO U.S., 7 pp., Cont.-in-part of U.S. Ser. No. 779,496, abandoned.
 CODEN: USXXAM
 DT Patent
 LA English
 FAN.CNT 4

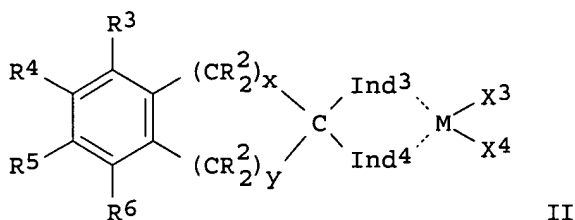
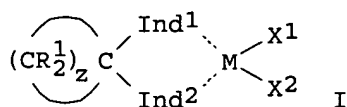
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5886202	A	19990323	US 1997-928820	19970912 <--
	CA 2302234	AA	19990325	CA 1998-2302234	19980624 <--
	WO 9914219	A1	19990325	WO 1998-US13095	19980624 <--
	W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
	AU 9881644	A1	19990405	AU 1998-81644	19980624 <--
	AU 731445	B2	20010329		
	EP 1023298	A1	20000802	EP 1998-931538	19980624 <--
	R: BE, DE, ES, FR, GB, IT				
	NO 2000001143	A	20000512	NO 2000-1143	20000306 <--
PRAI	US 1997-779496	B2	19970108		
	US 1997-779497	B2	19970108		
	US 1997-781157	B2	19970108		
	US 1997-928820	A	19970912		
	WO 1998-US13095	W	19980624		

OS MARPAT 130:252794
 AB The bridged fluorenyl/indenyl metallocenes, where the metal is Ti, Zr, Hf, Nb, or Ta, have a substituent at the 3 position of the indenyl moiety and show improved activity in polymerization of olefins. The substituent is C1-20 alkyl, aralkyl, alkenyl, alkylsilyl, alkenylsilyl, or alkoxyalkyl; the bridging group joins the 9-position of the fluorene group and the 1-position of the **indene** group; and σ -bonded ligands on the metal are H, halogen, C1-10 alkyl, C6-12 aryl, C2-10 alkenyl, C7-40 aralkyl, C8-40 aralkenyl, or C7-40 alkylaryl. Thus, Me₂SiHCl reacted with 1,5-hexadiene and the product with indenyllithium to give 1-(5-hexenyldimethylsilyl)**indene**, which was treated with BuLi and condensed with 9-(chlorodimethylsilyl)fluorene to give the bridged ligand. Reaction of the bridged ligand with ZrCl₄ gave a metallocene which, when used with Me aluminoxane, produced polyethylene with number-average mol. weight 380,000 with an activity of 46,000.

RE.CNT 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 38 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1999:142404 CAPLUS
DN 130:237986
TI Transition metal compound **polymerization** catalysts for
preparation of aromatic vinyl compound-olefin copolymers
IN Ootsu, Toshiaki; Arai, Susumu; Suzuki, Shigeru
PA Denki Kagaku Kogyo K. K., Japan
SO Jpn. Kokai Tokkyo Koho, 14 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 11060622	A2	19990302	JP 1997-219598	19970814 <--
PRAI	JP 1997-219598		19970814		
OS	MARPAT 130:237986				
GI					



AB Compds. I or II [Ind1-4 = (un)substituted indenyl; R1-2 = H, C1-20 alkyl, C6-10 aryl, C7-20 alkylaryl; R1 and another R1 groups, or R2 and another R2 groups may link together to form a 5-8-membered aliphatic ring; z = 2-10; X1-4 = H, halo, alkyl, aryl, silyl, alkoxy, NA1A2; A1-2 = R1-2, A1 and A2 may link together to form a 5-8-membered aromatic or aliphatic ring; M = Zr, Hf, Ti; x, y = 0-10, x + y ≥ 2; R3-6 = H, C1-20 alkyl, C6-10 aryl, C7-20 alkylaryl, halo, OSiR73, SiR73, PR72; R7 = C1-10 hydrocarbyl; adjacent R3-6 groups may link together to form a 5-8-membered aromatic or aliphatic ring]. Thus, 80 mL styrene and ethylene at 10 kg/cm²-G were copolymd. in the presence of rac-1,1-cyclopentylidenebis(1-indenyl)bisdimethylamidozirconium, triisobutylaluminum, and MMAO 3A in toluene to give a copolymer (styrene content 12.2 mol%, Mw/Mn 2.2) with high catalytic activity.

L9 ANSWER 39 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1999:96252 CAPLUS
DN 130:154084
TI Manufacture of hydrogenated **indene** derivative-based bridged metallocenes for preparation of polyolefins with high isotacticity
IN Winter, Andreas; Bingel, Carsten; Fraaije, Volker; Kueber, Frank
PA Targor G.m.b.H., Germany
SO PCT Int. Appl., 39 pp.
CODEN: PIXXD2
DT Patent
LA German
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

PI WO 9905153 A1 19990204 WO 1998-EP4630 19980723 <--
W: BR, CN, JP, KR, US
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL,
PT, SE
EP 1003757 A1 20000531 EP 1998-942609 19980723 <--
EP 1003757 B1 20030129
R: BE, DE, ES, FR, GB, IT, NL
JP 2001510847 T2 20010807 JP 2000-504148 19980723 <--
ES 2191962 T3 20030916 ES 1998-942609 19980723
US 6319874 B1 20011120 US 2000-462584 20000111 <--
PRAI DE 1997-19732366 A 19970728
WO 1998-EP4630 W 19980723

OS MARPAT 130:154084

AB Hydrogenated **indene** derivative-based bridged metallocenes of group
IIIB, IVB, VB, or VIB elements having racemic-meso ratios (20-200):1 are
manufactured and used to prepare highly isotactic polyolefins.

RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 40 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1999:96251 CAPLUS

DN 130:154083

TI Manufacture of bridged cyclopentadiene derivative-based metallocenes for
polymerization catalysts

IN Winter, Andreas; Bingel, Carsten; Fraaije, Volker; Kueber, Frank

PA Targor G.m.b.H., Germany

SO PCT Int. Appl., 39 pp.

CODEN: PIXXD2

DT Patent

LA German

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9905152	A1	19990204	WO 1998-EP4629	19980723 <--
	W: BR, CN, JP, KR, US				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	EP 1000073	A1	20000517	EP 1998-943773	19980723 <--
	EP 1000073	B1	20030205		
	R: BE, DE, ES, FR, GB, IT, NL				
	JP 2001510846	T2	20010807	JP 2000-504147	19980723 <--
	ES 2192788	T3	20031016	ES 1998-943773	19980723
	US 6365763	B1	20020402	US 2000-463441	20000127
PRAI	DE 1997-19732362	A	19970728		
	WO 1998-EP4629	W	19980723		

OS MARPAT 130:154083

AB Bridged cyclopentadiene derivative-based metallocenes of group IIIB, IVB, VB,
or VIB metals having racemic-meso ratios (20-200):1 are manufactured and used
for production of polyolefins with high isotacticity.

RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 41 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1999:34515 CAPLUS

DN 130:95986

TI Organo omega-alkenyl cyclopentacarbyl silane compounds and their
preparation for metallocene-catalyzed olefin **polymerization**

IN Jung, Michael; Alt, Helmut G.; Welch, M. Bruce

PA Phillips Petroleum Company, USA

SO U.S., 6 pp., Cont. of U.S. Ser. No. 779,497, abandoned.

CODEN: USXXAM

DT Patent

LA English

FAN.CNT 4

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5856547	A	19990105	US 1997-963113	19971028 <--
PRAI	US 1997-779497	B1	19970108		
OS	MARPAT 130:95986				

AB An (organo) (omega-alkenyl) (cyclopentacarbyl) silane compound (R1)2C:C(R1)-(C(R1)2)nSi(R0)(R2)2 [R0 = (cyclopentacarbyl) group, R1 = C1-20 hydrocarbyl; and R2 = C1-20 hydrocarbyl selected from alkyls, aryls, alkoxy, and aryloxy, n = .apprx.2-30] ligand is prepared and used to form a complex with a transition metal such as Group IV metal. Thus, dimethyl(chloro)(5-hexenyl)silane (preparation given) was treated with indenyllithium at -78° to give dimethyl(5-hexenyl)(1-indene)silane ligand (I). A Et2O solution of I, BuLi, and 9-fluorenyl(dimethyl)(chloro)silane was hydrolyzed to (1-(3-(hex-5-enyl)(dimethyl)silyl)indenyl)(dimethyl)(9-fluorenyl)silane intermediate (II). Intermediate II was complexed with ZrCl4 and used to polymerize C2H4 in the presence of Me aluminoxane cocatalyst at 60°.

RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 42 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1998:724229 CAPLUS

DN 130:52819

TI Transition metal complexes and olefin polymerization catalysts containing the complexes

IN Fukuoka, Daisuke; Hirokane, Shinya

PA Mitsui Chemicals Inc., Japan

SO Jpn. Kokai Tokkyo Koho, 16 pp.

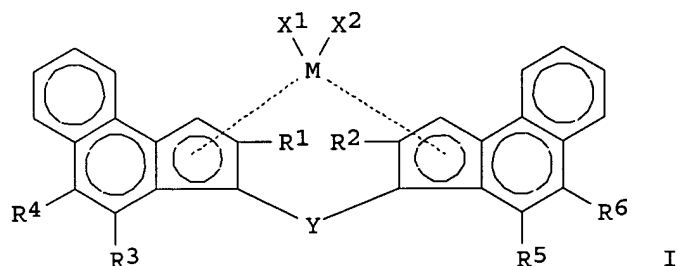
CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 10298219	A2	19981110	JP 1997-112888	19970430 <--
PRAI	JP 1997-112888		19970430		
OS	MARPAT 130:52819				
GI					



AB Title metal complexes are represented as I [M = Group IV-VI transition metals; R1, R2 = H, halogen, (halogenated) C1-20 hydrocarbyl, Si-, O-, S-, N-, or P-containing group; R3, R5 = (halogenated) C1-20 hydrocarbyl; R4, R6 = H, (halogenated) C1-20 hydrocarbyl; (R3 and R5) or (R4 and R6) may form a ring; X1, X2 = H, halogen, (halogenated) C1-20 hydrocarbon group, O- or S-containing group; Y = (halogenated) C1-20 hydrocarbylene, divalent Si-, Ge-, or Sn-containing group, O, CO, S, SO, SO2, N(R7), P(R7), P(O)(R7), B(R7), Al(R7); R7 = H, halogen, (halogenated) C1-20 hydrocarbon group]. The polymerization catalysts contain the complexes, showing high activity. Thus, reacting 20 g 2-methylnaphthalene and 38.8 g 2-bromo-2-methylproionyl bromide to give 2,7-dimethyl-4,5-benzo-1-indanone (II), reducing 18 g II to give 2,7-dimethyl-4,5-benzo-1-indanol (III), dehydrating III to give 2,7-dimethyl-4,5-benzoindene (IV), reacting 5.0 g IV and 1.72 mL dimethyldichlorosilane to give dimethylsilylenebis[1-(2,7-dimethyl-4,5-benzo)indene] (V), and reacting 2.0 g V and 1.05 g ZrCl4 gave rac-dimethylsilylenebis[1-(2,7-dimethyl-4,5-benzo)indenyl]zirconium dichloride (VI). Then, ethylene was polymerized in the presence of 0.002 mmol VI and 1.30 mg-atom (as Al) aluminoxane to give polyethylene with intrinsic viscosity 4.29 dL/g (decalin; 135°) and polymerization activity

180 kg-polymer/mmol-Zr-h.

L9 ANSWER 43 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1998:703458 CAPLUS

DN 129:316697

TI Transition metal compound **polymerization** catalysts, their preparation and use for manufacture of stereoregular aromatic vinyl compound (co)polymers

IN Arai, Toru; Otsu, Toshiaki; Suzuki, Shigeru

PA Denki Kagaku Kogyo Kabushiki Kaisha, Japan

SO Eur. Pat. Appl., 99 pp.

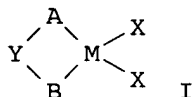
CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 872492	A2	19981021	EP 1998-105514	19980326 <--
	EP 872492	A3	19990303		
	EP 872492	B1	20031203		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	CN 1196357	A	19981021	CN 1998-105872	19980327 <--
	JP 11130808	A2	19990518	JP 1998-82158	19980327 <--
	CN 1521194	A	20040818	CN 2004-10005389	19980327
	HK 1015802	A1	20041029	HK 1999-100907	19990304
	US 2001051699	A1	20011213	US 2001-779098	20010208 <--
	US 6489424	B2	20021203		
PRAI	JP 1997-100527	A	19970417		
	JP 1997-100528	A	19970417		
	JP 1997-100529	A	19970417		
	JP 1997-232084	A	19970828		
	US 1998-48000	A3	19980326		
OS	MARPAT 129:316697				
GI					



AB Transition metal compds. I, where A is an unsubstituted or substituted benzindenyl group; B is an unsubstituted or substituted benzindenyl group, an unsubstituted or substituted cyclopentadienyl group, an unsubstituted or substituted indenyl group, or an unsubstituted or substituted fluorenyl group; Y is an unsubstituted or substituted methylene or silylene or a cyclic group; X is H, halogen, alkyl, aryl, alkylaryl, silyl, alkoxy, or dialkylamide group; M = Zr, Hf, Ti; is useful for the production of aromatic vinyl compound polymers or aromatic vinyl compound-olefin copolymers. Thus, ethylene and styrene were polymerized for 4 h at 50° in the presence of 2.1 μ mol rac-dimethylmethylenebis(4,5-benz-1-indenyl)zirconium dichloride (II) (preparation given), 84 μ mol MMAO 3A aluminoxane, and triisobutylaluminum, giving 874 g copolymer containing 15.5% styrene and having Mw 12.0 x 104 and Mn 8.0 x 104 with productivity 416 (g/mol-catalyst)/10, compared with 60 g copolymer containing 9.0% styrene, Mw 1.5 x 104, Mn 0.9 x 104, and productivity 28.6 for a copolymer prepared using tert-butylamide dimethyl(tetramethyl- η 5-cyclopentadienyl)silanetitanium dichloride instead of II.

L9 ANSWER 44 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1998:684852 CAPLUS

DN 129:302961

TI Bridged metallocenes and their use as catalysts for olefin **polymerization**

IN Resconi, Luigi; Balboni, Davide; Dang, Vu Anh; Yu, Lin-chen

PA Montell Technology Co., B.V., Neth.

SO PCT Int. Appl., 51 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9843989	A1	19981008	WO 1998-EP1931	19980327 <--
	W: AU, BR, CA, CN, CZ, HU, ID, IL, JP, KR, MX, NO, PL, RU, TR				
	RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	CA 2257177	AA	19981008	CA 1998-2257177	19980327 <--
	AU 9877581	A1	19981022	AU 1998-77581	19980327 <--
	EP 914323	A1	19990512	EP 1998-925462	19980327 <--
	EP 914323	B1	20030806		
	R: AT, BE, CH, DE, DK, ES, FR, GB, IT, LI, NL, SE, FI				
	BR 9804807	A	19990817	BR 1998-4807	19980327 <--
	JP 2000512310	T2	20000919	JP 1998-541174	19980327 <--
	ES 2203965	T3	20040416	ES 1998-925462	19980327
	US 6268518	B1	20010731	US 1998-50607	19980330 <--
	ZA 9804651	A	19981221	ZA 1998-4651	19980529 <--
	NO 9805579	A	19990128	NO 1998-5579	19981127 <--
	KR 2000016125	A	20000325	KR 1998-709692	19981128 <--
PRAI	EP 1997-201986	A	19970630		
	EP 1997-200933	A	19970329		
	WO 1998-EP1931	W	19980327		

OS MARPAT 129:302961

AB A new class of methylene-bridged metallocene compds. of zirconium, hafnium and titanium are synthesized and used as olefin polymerization catalysts.

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 45 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1998:501319 CAPLUS

DN 129:176132

TI Metallocene catalysts for olefin **polymerization**, manufacture of olefin polymers, and polyolefins obtained by the method

IN Imuta, Junichi; Murakami, Hidetatsu

PA Mitsui Chemicals Inc., Japan

SO Jpn. Kokai Tokkyo Koho, 52 pp.

CODEN: JKXXAF

DT Patent

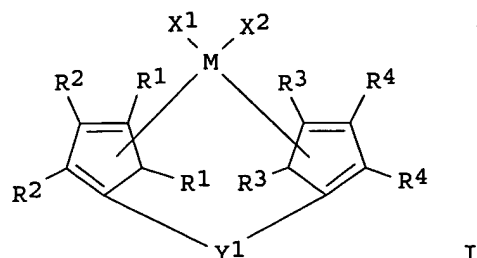
LA Japanese

FAN.CNT 1

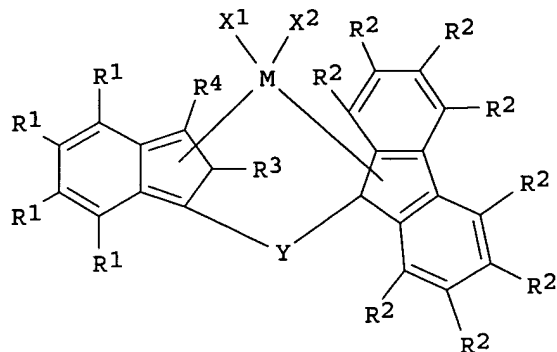
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 10204113	A2	19980804	JP 1997-19684	19970117 <--
PRAI	JP 1997-19684		19970117		

OS MARPAT 129:176132

GI



I



II

AB The catalysts comprise (A) Group IVB-VIB transition metal compds. I [M1 = Group IVB-VIB transition metal; R1-4 = (halo-substituted) C1-20 hydrocarbyl, Si-, O-, S-, N-, or P-containing group, H, halo; 2 of neighboring R1-4 may form a ring each other; X1, X2 = (halo-substituted) hydrocarbyl, O-, S-, or Si-containing group, H, halo; Y1 = divalent Si-, Ge-, or Sn-containing group, O, CO, S, SO, SO2, Ge, Sn, NR5, PR5, P(O)R5, BR5, AlR5; R5 = H, halo, (halo-substituted) hydrocarbyl, alkoxy], (B) H2O-treated organic aluminosy compds., and optional (C) organic Al compds. In the catalysts, I may be replaced with Group IVB transition metal compds. II [M = Group IVB transition metal; ≥ 1 R1 = C11-20 aryl, C12-40 arylalkyl, C13-40 arylalkenyl, C12-40 alkylaryl, Si-containing group; R1 may form an aromatic or aliphatic ring with ≥ 2 neighboring group (R1 = C4-20); the remaining R1 = H, halo, C1-10 alkyl, Si-containing group; R2 = H, halo, C1-10 alkyl, C6-20 aryl, C2-10 alkenyl, C7-40 arylalkyl, C8-40 arylalkenyl, C7-40 alkylaryl, Si-, O-, S-, N-, or P-containing group; ≥ 2 neighboring R2 may form an aromatic or aliphatic ring (R2 = C4-20); the remaining R2 = H, halo, C1-10 alkyl, Si-containing group; R3, R4 = H, halo, C1-10 alkyl, C6-20 aryl, C2-10 alkenyl, C7-40 arylalkyl, C8-40 arylalkenyl, C7-40 alkylaryl, Si-, O-, S-, or P-containing group; X1, X2 = H, halo, C1-20 (halo-substituted) hydrocarbyl, O-containing group, S- or N-containing group, conjugated diene residue by combination of X1 and X2; Y = C1-20 (halo-substituted) divalent hydrocarbon; divalent Si-, Ge-, or Sn-containing group; O, CO, S, SO, SO2, NR5, PR5, P(O)R5, BR5, AlR5; R5 = H, halo, C1-20 (halo-substituted) hydrocarbyl]. ≥ 1 Olefins, preferably ethylene-based ones, are (co)polymerized in the presence of the above catalysts. Polyolefins manufactured by the above method are also claimed. Thus, Dialene 8 and ethylene was polymerized at 120° for 15 min in the presence of 0.002 mmol (as Zr) dimethylsilylene(2-methyl-4,5-benzo-1-indenyl)(2,7-di-tert-butyl-9-fluorenyl)zirconium dichloride (prepared from 2,7-di-tert-butyl-9-fluorene, Me2SiCl2, 2-methyl-4,5-benzoindene, and ZrCl4) and H2O-treated iso-Bu Me aluminosy to give a copolymer with intrinsic viscosity .75 dL/g and d. 0.889 g/cm3.

L9 ANSWER 46 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1998:498648 CAPLUS

DN 129:161980

TI Metallocene catalysts for olefin **polymerization**, manufacture of olefin polymers, and polyolefins obtained by the method

IN Imuta, Junichi; Murakami, Hidetatsu

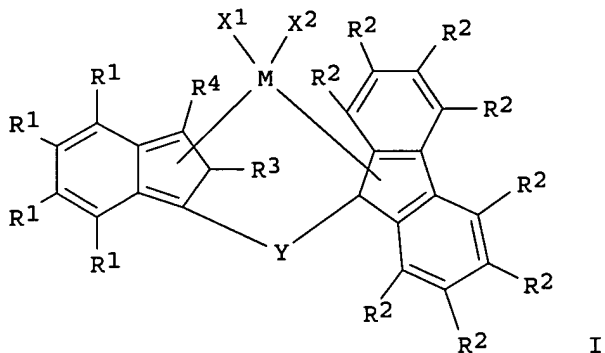
PA Mitsui Chemicals Inc., Japan

SO Jpn. Kokai Tokkyo Koho, 41 pp.

CODEN: JKXXAF

DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 10204112	A2	19980804	JP 1997-19683	19970117 <--
PRAI	JP 1997-19683		19970117		
OS	MARPAT 129:161980				
GI					



AB The catalysts are obtained by previously contacting (A) Group IVB transition metal compds. I [M = Group IVB transition metal; ≥ 1 R1 = C11-20 aryl, C12-40 arylalkyl, C13-40 arylalkenyl, C12-40 alkylaryl, Si-containing group; R1 may form an aromatic or aliphatic ring with ≥ 2 neighboring group (R1 = C4-20); the remaining R1 = H, halo, C1-10 alkyl, Si-containing group; R2 = H, halo, C1-10 alkyl, C6-20 aryl, C2-10 alkenyl, C7-40 arylalkyl, C8-40 arylalkenyl, C7-40 alkylaryl, Si-, O-, S-, N-, or P-containing group; ≥ 2 neighboring R2 may form an aromatic or aliphatic ring (R2 = C4-20); the remaining R2 = H, halo, C1-10 alkyl, Si-containing group; R3, R4 = H, halo, C1-10 alkyl, C6-20 aryl, C2-10 alkenyl, C7-40 arylalkyl, C8-40 arylalkenyl, C7-40 alkylaryl, Si-, O-, S-, or P-containing group; X1, X2 = H, halo, C1-20 (halo-substituted) hydrocarbyl, O-containing group, S- or N-containing group, conjugated diene residue by combination of X1 and X2; Y = C1-20 (halo-substituted) divalent hydrocarbon; divalent Si-, Ge-, or Sn-containing group; O, CO, S, SO, SO2, NR5, PR5, P(O)R5, BR5, AlR5; R5 = H, halo, C1-20 (halo-substituted) hydrocarbyl] with (B) organic aluminosy compds. and/or ion pair-forming compds. with I, and optionally (C) organic Al compds. ≥ 1 Olefins, preferably ethylene-based ones, are (co)polymerized in the presence of the above catalysts. Polyolefins manufactured by the above method are also claimed. Thus, 1-octene and ethylene was polymerized at 140° for 15 min in the presence of 0.001 mmol (as Zr) dimethylsilylene(2-methyl-4,5-benzo-1-indenyl)(2,7-di-tert-butyl-9-fluorenyl)zirconium dichloride (prepared from 2,7-di-tert-butyl-9-fluorene, Me2SiCl2, 2-methyl-4,5-benzoindene, and ZrCl4) and Me aluminoxane (previously contact for 30 min) to give a copolymer with melt-flow rate 0.16 g/10 min and d. 0.892 g/cm3.

L9 ANSWER 47 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1998:479544 CAPLUS
DN 129:109420
TI Metallocene procatalysts and their preparing process
IN Hazin, Paulette Nasri
PA Union Carbide Chemicals & Plastics Technology Corp., USA
SO PCT Int. Appl., 30 pp.
CODEN: PIXXD2

DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI WO 9828314 A1 19980702 WO 1997-US23805 19971219 <--
W: AU, BR, CA, CN, CZ, JP, KP, KR, MX, PL, RU, SK
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE
US 5900497 A 19990504 US 1996-770410 19961220 <--
AU 9857172 A1 19980717 AU 1998-57172 19971219 <--
EP 946576 A1 19991006 EP 1997-953420 19971219 <--
EP 946576 B1 20020403
R: BE, DE, ES, FR, GB, IT, NL, SE
ES 2172034 T3 20020916 ES 1997-953420 19971219
PRAI US 1996-770409 A 19961220
US 1996-770410 A 19961220
WO 1997-US23805 W 19971219

OS MARPAT 129:109420

AB The procatalysts useful in a **catalyst** system for polymerization of olefins, particularly to make stereospecific polymers, and more particularly polymerization to make isotactic polypropylene are obtained from a process in which the product of a reaction between a suitable ligand and an alkali-alkyl is reacted with a transition metal salt in the presence of an accelerant that has ≥ 1 lone pair of electrons in its outer valence shell. When the metallocene procatalyst produced is used in a **catalyst** system for the production of isotactic polymers, specifically isotactic polypropylene, the metallocene procatalyst can be used without isolating and separating the racemic modification from the meso form.

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 48 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1998:473974 CAPLUS

DN 129:136627

TI Silylene-bridged (ω -1)-alkenyl-substituted metallocenes and their use as olefin **polymerization** catalysts

IN Jung, Michael; Alt, Helmut G.; Welch, Melvin Bruce

PA Phillips Petroleum Co., USA

SO Eur. Pat. Appl., 11 pp.

CODEN: EPXXDW

DT Patent

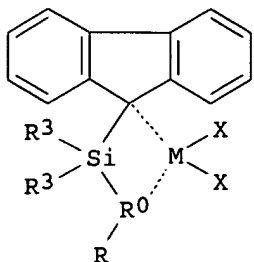
LA English

FAN.CNT 4

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 853086	A1	19980715	EP 1998-100136	19980107 <--
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	US 6329541	B1	20011211	US 1997-969876	19971114 <--
	CA 2225197	AA	19980708	CA 1997-2225197	19971218 <--
	CA 2225197	C	20010904		
	AU 9748516	A1	19980716	AU 1997-48516	19971222 <--
	AU 697506	B2	19981008		
	SG 70617	A1	20000222	SG 1997-4664	19971223 <--
	ZA 9800015	A	19980708	ZA 1998-15	19980102 <--
	EG 21217	A	20010228	EG 1998-12	19980105 <--
	CN 1188768	A	19980729	CN 1998-104202	19980106 <--
	CN 1065869	B	20010516		
	JP 11001489	A2	19990106	JP 1998-1107	19980106 <--
	BR 9803274	A	20000118	BR 1998-3274	19980106 <--
	NO 9800074	A	19980709	NO 1998-74	19980107 <--
	HU 220172	B	20011128	HU 1998-17	19980108 <--
PRAI	US 1997-779496	A	19970108		

OS MARPAT 129:136627

GI



I

AB The metallocenes, especially useful in polymerization of ethylene, have the structure I [M = Ti, Zr, Hf, V, Nb, Ta, Cr, Mo, W, lanthanide; R0 = cyclopentadienyl or indenyl residue; R = (R1)2C:CR1[C(R1)2]nC(R1)2; each R1 = H, C1-20 hydrocarbyl, alkoxy, aryloxy; R3 = H, alkyl, aryl, alkoxy, aryloxy; X = H, halogen, alkyl, aryl, alkoxy, aryloxy, amide; n = 0-20]. Thus, **indene** was lithiated and condensed with allyl bromide to give 1-allylindene, which was lithiated and condensed with 9-(chlorodimethylsilyl)fluorene, and the product was lithiated and treated with ZrCl4 to give a metallocene. Polymerization of ethylene in pentane by use of this metallocene and Me aluminoxane at 60°/10 bars gave polyethylene with viscosity-average mol. weight 350,000.

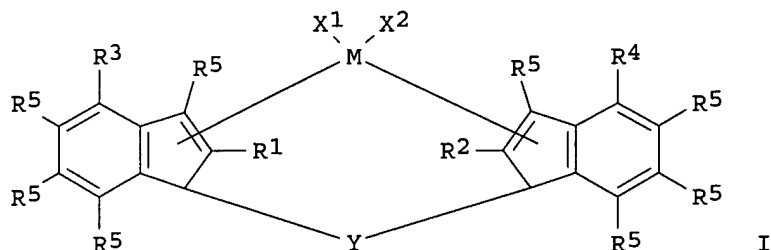
RE.CNT 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 49 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1998:211183 CAPLUS
DN 128:257831
TI Olefin **polymerization** catalysts and **polymerization** of
olefins therewith
IN Fukuoka, Daisuke; Kawai, Koji; Nitabara, Masatoshi
PA Mitsui Petrochemical Industries, Ltd., Japan; Mitsui Chemicals Inc.
SO Jpn. Kokai Tokkyo Koho, 16 pp.
CODEN: JKXXAF

DT Patent
LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 10087716	A2	19980407	JP 1996-250353	19960920 <--
	JP 3704211	B2	20051012		
PRAI	JP 1996-250353		19960920		
OS	MARPAT 128:257831				
GI					



I

AB Title catalysts comprise (A) transition metal compds. I (M = Groups 4-6 transition metal; R1, R2 = different C1-4 alkyl; R3, R4 = C10-16 aryl which may be substituted with C1-20 hydrocarbyl; R5 = H, C1-4 alkyl; X1, X2 = H, halo, C1-20 hydrocarbyl, C1-20 halohydrocarbyl, O- or S-containing group; Y = bivalent C1-20 hydrocarbyl, bivalent C1-20 halohydrocarbyl, Si- or Ge-containing group, O, CO, S, SO, SO2, NR6, PR6, P(O)R6, BR6, AlR6; R6 = H, halo, C1-20 hydrocarbyl, C1-20 halohydrocarbyl) and (B)

organoaluminumoxy compds. and/or compds. which can form ionic pairs with I. Thus, propylene was polymerized at 50° for 6 min in PhMe in the presence of triisobutylaluminum, Me aluminoxane, and dimethylsilanediyl[2-ethyl-4-(9-phenanthryl)indenyl][2-methyl-4-(9-phenanthryl)indenyl]zirconium dichloride to give polypropylene with intrinsic viscosity 4.74 dL/g and m.p. 159.1° in the yield of 20.8 kg/mmol-Zr/h.

L9 ANSWER 50 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1998:194865 CAPLUS
DN 128:283103
TI Phosphorus-bridged metallocenes: New homogeneous catalysts for the polymerization of propene
AU Schaverien, Colin J.; Ernst, Rene; Terlouw, Wim; Schut, Peter; Sudmeijer, Olof; Budzelaar, Peter H. M.
CS Shell Research and Technology Centre Amsterdam, Amsterdam, 1030 BN, Neth.
SO Journal of Molecular Catalysis A: Chemical (1998), 128(1-3), 245-256
CODEN: JMCCF2; ISSN: 1381-1169
PB Elsevier Science B.V.
DT Journal
LA English
AB The synthesis of a new class of metallocenes for the syndiospecific, aspecific and isospecific polymerization of propene is reported. This has been achieved by the incorporation of a phosphorus linking the cyclopentadienyl-type rings. The catalyst precursors, syndiospecific PhP(fluorenyl-Cp)ZrCl₂ (2), aspecific PhP(fluorenyl)2ZrCl₂ (4), and isospecific PhP(indenyl)2ZrCl₂ (5), RP(2-Me,4-Ph-indenyl)2ZrCl₂ (R = Ph (6); R = iso-Pr (7)) were prepared. Compound 2, after activation by methylaluminoxane (MAO), in LIPP at 67° affords syndiotactic polypropene (s-PP) with an activity of 155 kg s-PP/g Zr h. The phys. properties of the s-PP (stereoregularity and mol. weight) are similar to that of conventional carbon-bridged systems. Ab initio calcns. on model compds. assisted in rationalizing the high syndiospecificity of 2 in contrast to the much poorer stereoregularity of closely related Me₂Si(fluorenyl-Cp)ZrCl₂. Aspecific metallocene 4, after activation with MAO, affords high mol. weight atactic-PP, albeit with a low activity. Metallocenes 6 and 7, activated by MAO, afford isotactic polypropene (i-PP) with extremely high stereoregularity (>98% mmmm pentads), m.ps. 156-160° and mol. wts. tunable in the range 250,000-1,100,000. Activities of up to 580 kg i-PP/g Zr h for 6/MAO (LIPP, 67°, 37,000 equivalent MOA) and 1265 kg i-PP/g Zr h for 7/MAO (LIPP, 50°, 37,000 equivalent MOA) have been obtained.

RE.CNT 50 THERE ARE 50 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 51 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1998:175955 CAPLUS
DN 128:217746
TI Alpha-olefin/vinylidene aromatic monomer and/or hindered aliphatic or cycloaliphatic vinylidene monomer interpolymers with increased modulus
IN Campbell, Richard E., Jr.; McAdon, Mark H.; Nickias, Peter N.; Patton, Jasson T.; Redwine, Oscar D.; Timmers, Francis J.
PA Dow Chemical Company, USA; Campbell, Richard E., Jr.; McAdon, Mark H.; Nickias, Peter N.; Patton, Jasson T.; Redwine, Oscar D.; Timmers, Francis J.
SO PCT Int. Appl., 30 pp.
CODEN: PIXXD2

DT Patent
LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9809999	A2	19980312	WO 1997-US15559	19970904 <--
	WO 9809999	A3	19980430		
	W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US,				

UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR,
GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA,
GN, ML, MR, NE, SN, TD, TG

ZA 9707907	A	19990303	ZA 1997-7907	19970903 <--
TW 473503	B	20020121	TW 1997-86112679	19970903
CA 2264894	AA	19980312	CA 1997-2264894	19970904 <--
AU 9741810	A1	19980326	AU 1997-41810	19970904 <--
EP 923612	A2	19990623	EP 1997-939797	19970904 <--
EP 923612	B1	20030416		

R: AT, BE, CH, DE, ES, FR, GB, IT, LI, NL, SE, FI				
CN 1232476	A	19991020	CN 1997-198572	19970904 <--
CN 1096475	B	20021218		
JP 2001500180	T2	20010109	JP 1998-512885	19970904 <--
BR 9711675	A	20020102	BR 1997-11675	19970904
AT 237649	E	20030515	AT 1997-939797	19970904
ES 2197362	T3	20040101	ES 1997-939797	19970904
US 6191245	B1	20010220	US 1999-254251	19990302 <--
PRAI US 1996-708869	A2	19960904		
WO 1997-US15559	W	19970904		

OS MARPAT 128:217746

AB The title polymers comprise α -olefin/vinylidene aromatic monomer and/or hindered (cyclo)aliphatic vinylidene monomers containing ≥ 1 tetrad sequences consisting of α -olefin/vinylidene aromatic monomer or hindered (cyclo)aliphatic monomer/vinylidene aromatic monomer or hindered (cyclo)aliphatic vinylidene monomer/ α -olefin insertions detectable by ^{13}C -NMR spectroscopy, wherein the monomer insertion of the tetrads occur exclusively in a 1,2 (head-to-tail) manner. In particular, ethylene/styrene copolymers have peaks in the ^{13}C -NMR spectra in the chemical shift range 43.70-44.25 ppm, preferably 43.75-44.25 ppm and 38.0-38.5 ppm, said peaks being at least three times the peak to noise. The interpolymers are prepared by polymerizing the appropriate mixture of monomers in the presence of a catalyst such as rac-[dimethylsilanediyl(2-methyl-4-phenylindenyl)]zirconium dichloride.

LS ANSWER 52 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1998:143420 CAPLUS

DN 128:217739

TI Transition metal metallocene compounds and olefin-polymerization catalyst components from them

IN Fukuoka, Daisuke; Kawai, Koji; Nitabara, Masatoshi

PA Mitsui Petrochemical Industries, Ltd., Japan; Mitsui Chemicals Inc.

SO Jpn. Kokai Tokkyo Koho, 16 pp.

CODEN: JKXXAF

DT Patent

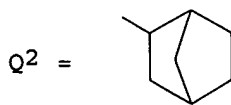
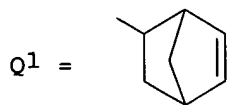
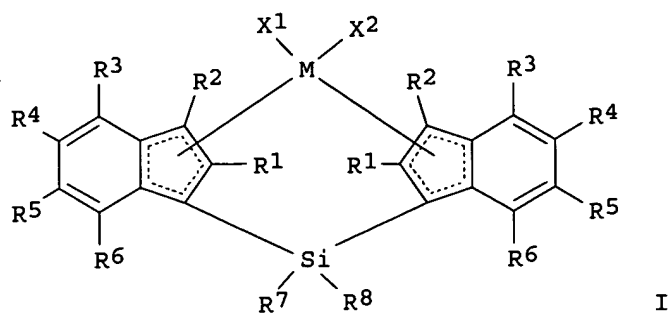
LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 10060031	A2	19980303	JP 1996-223755	19960826 <--
	JP 3704205	B2	20051012		
PRAI	JP 1996-223755		19960826		

OS MARPAT 128:217739

GI



AB Title transition metal metallocene compds. are shown as I. [M = Group 4-6 transition metal; R1-6 = H, halo, C1-20 (halo-containing) hydrocarbyl, Si-, O-, S-, N-, or P-containing group; ≥ 1 of R2 = R3 = R4 = R5 = R6 \neq H; R7 = C1-20 hydrocarbyl; R8 = Q1, Q2; X1, X2 = H, halo, C1-20 (halo-containing) hydrocarbyl, O- or S-containing group]. Olefin-polymerization **catalyst** components, which show high catalytic activity, are composed of I. Propylene was polymerized in the presence of triisobutylaluminum, Me aluminoxane, and rac-methyl-2-norbornylsilylbis(2-ethyl-4-phenylindenyl)zirconium dichloride (preparation given) in PhMe to give a polymer showing catalytic activity 43.9 kg/mmol-Zr-h.

L9 ANSWER 53 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1998:131475 CAPLUS

DN 128:141072

TI A New Class of Isospecific, Highly Regiospecific Zirconocene Catalysts for the **Polymerization** of Propene

AU Resconi, Luigi; Piemontesi, Fabrizio; Camurati, Isabella; Sudmeijer, Olof; Nifant'ev, Ilya E.; Ivchenko, Pavel V.; Kuz'mina, Lyudmila G.

CS Centro Ricerche G. Natta, Montell Polyolefins, Ferrara, 44100, Italy

SO Journal of the American Chemical Society (1998), 120(10), 2308-2321

CODEN: JACSAT; ISSN: 0002-7863

PB American Chemical Society

DT Journal

LA English

AB A new class of isospecific and highly regiospecific C2-sym. ansa-zirconocenes, characterized by a bisindenyl ansa ligand with bulky substituents in the 3 position of **indene** and a single carbon bridge is disclosed: variation of the size of the substituent in C(3) has a strong effect on the extent of chain transfer and isospecificity in propene polymerization. In fact, while rac-[Me2C(1-indenyl)2]ZrCl2 produces low-mol.-weight and moderately isotactic polypropene (iPP) also containing some regioirregularities (.hivin.Mn = 6500, mmm ca. 81% and 2,1tot = 0.4% at 50 °C in liquid monomer), rac-[Me2C(3-tert-butyl-1-indenyl)2]ZrCl2 produces iPP with mol. wts. between 25,000 (Tp = 70 °C) and 410,000 (Tp = 20 °C) and a fairly high isotacticity (mmmm ca. 95% at 50 °C), with no detectable 2,1 units. The influence of polymerization temperature on the **catalyst** performance has been investigated by polymerizing propene in liquid propene in the temperature range of 20-70 °C: the exptl. $\Delta\Delta E$.thermod. values for enantioface selectivity have been estimated for two members of the new class (rac-[Me2C(3-tert-butyl-1-indenyl)2]ZrCl2 $\Delta\Delta E$.thermod.enant = 4.6 kcal/mol; rac-[Me2C(3-(trimethylsilyl)-1-indenyl)2]ZrCl2 $\Delta\Delta E$.thermod.enant = 2.6 kcal/mol). For comparison, Brintzinger's moderately isospecific, benchmark **catalyst** rac-[ethylene(1-indenyl)2]ZrCl2 ($\Delta\Delta E$.thermod.enant = 3.3 kcal/mol), the single carbon bridged, unsubstituted rac-[Me2C(1-indenyl)2]ZrCl2 ($\Delta\Delta E$.thermod.enant = 2.8 kcal/mol), and the C2-sym., practically aspecific, rac-[ethylene(3-methyl-1-indenyl)2]ZrCl2

($\Delta E_{\text{thermod.enant}}$ = 1.9 kcal/mol) are also reported. The mol. structures of rac-[Me₂C(3-tert-butyl-1-indenyl)₂]ZrCl₂ and rac-[Me₂C(3-(trimethylsilyl)-1-indenyl)₂]ZrCl₂ have been determined (Rac) 180712-71-4 (meso).

RE.CNT 84 THERE ARE 84 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 54 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1998:115900 CAPLUS

DN 128:154227

TI Preparation of metallocene compounds

IN Tsutsumi, Kunihiro; Hori, Junichi; Yamazaki, Yasuhiro; Sugawara, Yasuaki; Murata, Kunihiro; Yoshida, Masahiro

PA Kanto Kagaku, Japan

SO Jpn. Kokai Tokkyo Koho, 4 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 10045786	A2	19980217	JP 1996-218089	19960801 <--
PRAI	JP 1996-218089		19960801		

OS CASREACT 128:154227

AB Characterized is a process for preparation of the title compds. (I) by treatment of cyclopentadiene, **indene**, fluorene, or bridged compds. thereof with alkyl lithium and reacted with transition metal salts. I, useful as catalysts in the production of polyolefin, are prepared in an industrial manner efficiently and economically. Thus, 1,1-cyclopentadienyl-(9-fluorenyl)diphenylmethane was treated with n-BuLi in a mixture of toluene and THF, and further reacted with zirconium chloride to give 81% diphenylmethylene (9-fluorenyl) (cyclopentadiene) zirconium chloride.

L9 ANSWER 55 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1998:89815 CAPLUS

DN 128:116141

TI Synthesis of Elastomeric Poly(propylene) Using Unsymmetrical Zirconocene Catalysts: Marked Reactivity Differences of "Rac"- and "Meso"-like Diastereomers

AU Bravakis, Anna M.; Bailey, Linda E.; Pigeon, Michael; Collins, Scott
CS Department of Chemistry, University of Waterloo, Waterloo, ON, N2L 3G1, Can.

SO Macromolecules (1998), 31(4), 1000-1009

CODEN: MAMOBX; ISSN: 0024-9297

PB American Chemical Society

DT Journal

LA English

AB Synthesis of meso- and racemic-like diastereomers of Me₂Si(3-MeInd)(Ind)ZrCl₂ (5 and 6, resp.) was achieved through either metathetical reactions between the dianion of Me₂(3-MeIndH)(IndH) (4) with ZrCl₄ or via amine elimination reactions, followed by fractional crystallization. Propylene polymers using meso-5 in the presence of Me aluminoxane under a variety of conditions leads to the formation of low-mol.-weight, semicryst., low tacticity, polypropylene (PP). The dominant chain transfer mechanism in this case involves β -H transfer to monomer. In contrast, rac-6 provides higher mol. weight, semicryst., elastomeric PP (elPP) under a variety of conditions; chain transfer in this case involves, predominantly, β -H transfer to Zr. The properties of elPP produced using **catalyst 6** show a gradual change from a lightly, crosslinked elastomer to a poorly crystalline thermoplastic, depending on both polymer mol. weight and crystallinity as revealed by differential scanning calorimetry and tensile testing. In particular, more crystalline material exhibits a higher initial modulus, yielding behavior and lower strain to break than less crystalline material of equivalent mol. weight. These findings further define polymer properties for the synthesis of flexible elastomers using this class of catalysts.

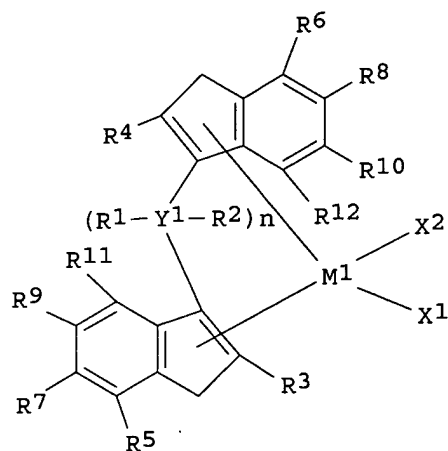
RE.CNT 48 THERE ARE 48 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 56 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN
 AN 1997:717944 CAPLUS
 DN 127:346798
 TI Metallocene **catalyst** components and catalysts containing the
 same and manufacture isotactic polyolefins using the same with high
 stereoregularity and positional regularity
 IN Okumura, Yoshikuni; Sakuragi, Tsutomu; Ono, Michio; Inazawa, Shintaro
 PA Japan Polyolefins Co., Ltd., Japan
 SO PCT Int. Appl., 93 pp.
 CODEN: PIXXD2

DT Patent
 LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9740075	A1	19971030	WO 1997-JP1387	19970422 <--
	W: JP, KR, US				
	RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	EP 834519	A1	19980408	EP 1997-917469	19970422 <--
	EP 834519	B1	20020306		
	R: DE, FR, GB, IT				
	JP 3181920	B2	20010703	JP 1997-537923	19970422 <--
	US 6121182	A	20000919	US 1997-981545	19971211 <--
PRAI	JP 1996-99696	A	19960422		
	JP 1997-33430	A	19970218		
	WO 1997-JP1387	W	19970422		
OS	MARPAT 127:346798				
GI					



AB The title **catalyst** components contain metallocenes I [M1 Ti, Zr, Hf; X1, X2 = H, halogen, C1-20 (halo)hydrocarbyl, OR, SR, O2CR, SO2R, OSSO2R, NRR'; R, R' = H, C1-7 (halo)hydrocarbyl; R1, R2 = H, C1-20 hydrocarbyl, OR'', SR''; R'' = H, C1-7 (halo)hydrocarbyl; R1R2 = ring member; R3 = H, -A1H2R13; R4 = -A2R14R15R16; A1, A2 = C, Si, Ge, Sn; R13-16 = H, halogen, C1-7 hydrocarbyl containing optional Si and/or halogen atom; R14-16 may be bonded to A2 forming a ring; excluding ≥2 of R14-16 being H; R5-12 = H, C1-20 hydrocarbyl optionally containing Si, together ring member; Y1 = C, Si, Ge; n = 1-3]. Rac-dimethylsilylene(2-isopropyl-1-indenyl)(1-indenyl)zirconium dichloride was prepared and used together with triisobutylaluminum and triphenylcarbenium tetrakis(pentafluorophenyl)borate for making isotactic polypropylene with catalytic activity 368 kg-polymer/mmol-Zr/h, mol. weight 300,000, Mw/Mn 3.14, stereoregularity (mmmm) 91.86%, 2,1-addition 0.12%, and 1,3-addition 0.02%.

L9 ANSWER 57 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN
 AN 1997:533657 CAPLUS
 DN 127:191199
 TI Heteroatom substituted metallocene compounds for olefin

**polymerization catalyst systems and methods for
preparing them**

IN Leino, Reko; Luttikhedde, Hendrik; Wilen, Carl-Erik; Nasman, Jan
PA Borealis A/S, Den.; Leino, Reko; Luttikhedde, Hendrik; Wilen, Carl-Erik;
Nasman, Jan
SO PCT Int. Appl., 42 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9728170	A1	19970807	WO 1997-FI49	19970130 <--
	W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, US, UZ, VN				
	RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
	FI 9600437	A	19970731	FI 1996-437	19960130 <--
	FI 104826	B1	20000414		
	CA 2246061	AA	19970807	CA 1997-2246061	19970130 <--
	CA 2246061	C	20060314		
	ZA 9700766	A	19970818	ZA 1997-766	19970130 <--
	AU 9715485	A1	19970822	AU 1997-15485	19970130 <--
	AU 722731	B2	20000810		
	EP 880534	A1	19981202	EP 1997-901652	19970130 <--
	EP 880534	B1	20031217		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI				
	CN 1214687	A	19990421	CN 1997-193331	19970130 <--
	CN 1089342	B	20020821		
	BR 9707236	A	19990720	BR 1997-7236	19970130 <--
	JP 2000505794	T2	20000516	JP 1997-527331	19970130 <--
	IL 125542	A1	20030312	IL 1997-125542	19970130
	AT 256691	E	20040115	AT 1997-901652	19970130
	ES 2212070	T3	20040716	ES 1997-901652	19970130
	TW 442509	B	20010623	TW 1997-86106655	19970519 <--
	US 6277778	B1	20010821	US 1998-117439	19980923 <--
PRAI	FI 1996-437	A	19960130		
	WO 1997-FI49	W	19970130		

OS MARPAT 127:191199

AB According to the invention a new **catalyst** precursor is obtained, in which alkoxy or siloxy substitution in the 2-position of 5-membered ring of indenyl compound has been carried out. Thereby a metallocene compound is achieved, in which an O atom is directly bonded to the 2-position of a pentahapto indenyl moiety. The **catalyst** precursors can be used as components for olefin polymerization catalysts. Thus, adding n-BuLi to a solution of dimethylbis[2-(tert-butyldimethylsiloxy)indenyl]silane in Et₂O at 0°, stirring overnight at room temperature, removing solvent, mixing with ZrCl₄, cooling to -80°, adding precooled CH₂Cl₂, gradually warming to room temperature, stirring overnight, filtering LiCl off, and concentrating the filtrate gave a mixture of rac- and meso-dimethylsilylenebis[2-(tert-butyldimethylsiloxy)indenyl]zirconium chlorides. Polymerization of ethylene and propylene was carried out with the mixture above and Me aluminoxane to give polymer with narrow mol. weight distillation

L9 ANSWER 58 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1997:480880 CAPLUS
DN 127:95730
TI Metallocene catalysts for the copolymerization of cycloolefins
IN Riedel, Michael; Weller, Thomas; Jacobs, Alexandra
PA Hoechst A.-G., Germany
SO Ger. Offen., 12 pp.
CODEN: GWXXBX
DT Patent
LA German
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 19546500	A1	19970619	DE 1995-19546500	19951213 <--
	EP 779306	A2	19970618	EP 1996-119751	19961210 <--
	EP 779306	A3	19990303		
	EP 779306	B1	20031203		
	R: DE, FR, GB, IT, NL				
	CA 2192771	AA	19970614	CA 1996-2192771	19961212 <--
	CN 1151995	A	19970618	CN 1996-121528	19961212 <--
	CN 1089771	B	20020828		
	JP 09176223	A2	19970708	JP 1996-333458	19961213 <--
	US 5869586	A	19990209	US 1996-766622	19961213 <--
	US 6020444	A	20000201	US 1998-90855	19980604 <--
PRAI	DE 1995-19546500	A	19951213		
	US 1996-766622	A1	19961213		
OS	MARPAT 127:95730				
AB	The title catalysts, which enable the economical polymerization of cycloolefins with acyclic olefins, are bridged metallocene complexes of tetravalent transition metal amides of specified structure. The reaction of 1.55 mmol Zr amide with 345 mg (1-cyclopentadienyl-1-methylethyl)indene in PhMe at -78° and stirring for 3 h at 80° gave 99% bis(dimethylamido)[(1-cyclopentadienyl-1-methylethyl)indenyl]zirconium (I). Stirring 600 mL 85% PhMe solution of norbornene with 5 mL 10.1% Me aluminoxane solution, 1.5 mg I, and C2H4 at 70°/6 bar gave 44 g copolymer with viscosity number 69 mL/g and glass temperature 193°.				

L9 ANSWER 59 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1997:469990 CAPLUS
DN 127:95726
TI Metallocene catalysts for high-molecular- weight copolymers
IN Winter, Andreas; Kueber, Frank; Bachmann, Bernd
PA Hoechst A.-G., Germany; Basell Polyolefine GmbH
SO Eur. Pat. Appl., 33 pp.
CODEN: EPXXDW
DT Patent
LA German
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 776913	A2	19970604	EP 1996-118856	19961126 <--
	EP 776913	A3	19980902		
	EP 776913	B1	20040204		
	R: AT, BE, DE, ES, FI, FR, GB, IT, NL				
	DE 19544828	A1	19970605	DE 1995-19544828	19951201 <--
	EP 1270614	A2	20030102	EP 2002-19624	19961126
	EP 1270614	A3	20041222		
	R: AT, BE, DE, ES, FR, GB, IT, NL, FI				
	AT 258940	E	20040215	AT 1996-118856	19961126
	ES 2216031	T3	20041016	ES 1996-118856	19961126
	TW 454021	B	20010911	TW 1996-85114702	19961128 <--
	ZA 9610051	A	19970601	ZA 1996-10051	19961129 <--
	CA 2191661	AA	19970602	CA 1996-2191661	19961129 <--
	NO 9605106	A	19970602	NO 1996-5106	19961129 <--
	NO 310877	B1	20010910		
	JP 09176222	A2	19970708	JP 1996-321808	19961202 <--
	BR 9605779	A	19980825	BR 1996-5779	19961202 <--
	US 6057408	A	20000502	US 1998-58828	19980413 <--
	US 6787618	B1	20040907	US 2000-534588	20000327
PRAI	DE 1995-19544828	A	19951201		
	EP 1996-118856	A3	19961126		
	US 1996-759073	B1	19961202		
	US 1998-58828	A3	19980413		
OS	MARPAT 127:95726				
AB	High-mol.-weight propylene-olefin copolymers are obtained using supported metallocene catalysts with bridged substituted arylindenyl ligands in combination with a cocatalyst such as an aluminoxane. A supported metallocene catalyst (A) from rac-dimethylsilanediylbis(2-methyl-4-(1-naphthyl)indenyl)zirconium dichloride (I) and Me aluminoxane on silica gel was obtained by filtering and drying a suspension of the				

supported aluminosilane and I. Solution polymerization of propylene with ethylene (II) in the presence of catalyst A and (iso-Bu)₃Al gave a copolymer containing 0.8% II and having weight-average mol. weight 685,000 g/mol, polydispersity index 2.2, and m.p. 145°. The activity of the metallocene catalyst was 180.2 kg polypropylene/g metal-h.

L9 ANSWER 60 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1997:299205 CAPLUS

DN 126:277901

TI Low-melting 1-butene-propylene copolymers and films and molded articles therefrom

IN Fischer, David; Langhauser, Franz; Lilge, Dieter; Hingmann, Roland; Schweier, Guenther

PA BASF A.-G., Germany

SO Ger. Offen., 9 pp.

CODEN: GWXXBX

DT Patent

LA German

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 19533337	A1	19970313	DE 1995-19533337	19950911 <--
	WO 9710286	A1	19970320	WO 1996-EP3889	19960904 <--
	W: CN, JP, US				
	RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	EP 851889	A1	19980708	EP 1996-931771	19960904 <--
	R: BE, DE, ES, FR, GB, IT, NL				
	CN 1202186	A	19981216	CN 1996-198207	19960904 <--
	JP 11512461	T2	19991026	JP 1996-511621	19960904 <--
PRAI	DE 1995-19533337	A	19950911		
	WO 1996-EP3889	W	19960904		

OS MARPAT 126:277901

AB The copolymers, with propylene content ≥80%, have m.p. (T) <145° and mol.-weight distribution <2.5, and preferably show xylene solubility at 20° ≤ [542,400 exp(-0.1T) + 0.5] weight%. They may be prepared by polymerization in the presence of a catalyst system comprising a bridged indene metallocene compound, a metallocenium ion-forming compound (e.g., an aluminosilane), and optionally AlR₁R₂R₃ (R₁-R₃ = halogen, C₁-12 alkyl). Thus, 1 kg Me aluminosilane-impregnated silica gel was treated with a solution of 5.8 g rac-[(dimethylsilylene)bis(2-methylbenzindenyl)]zirconium dichloride in 1.32 L 1.53M Me aluminosilane toluene solution to give a catalyst, which was dried to an orange powder. This catalyst (10 g/h) and 30 mmol/h iso-Bu₃Al were fed to a 200-L gas-phase reactor in which 1-butene and propylene were copolymerized at 60°/24 bars for 48 h. When the mole fraction of butene in the feed was 10.4%, the polymer had average particle size 1.32 μm, butene content 2.2 mol%, m.p. 135.3°, xylene solubility 0.57 weight%, and polydispersity 1.74.

L9 ANSWER 61 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1997:296806 CAPLUS

DN 126:277882

TI Continuous manufacture of 1-butene-propylene copolymers by use of bridged metallocene catalysts

IN Fischer, David; Langhauser, Franz; Kersting, Meinolf; Hingmann, Roland; Schweier, Guenther

PA BASF A.-G., Germany

SO Ger. Offen., 10 pp.

CODEN: GWXXBX

DT Patent

LA German

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 19533336	A1	19970313	DE 1995-19533336	19950911 <--
	WO 9710272	A1	19970320	WO 1996-EP3891	19960904 <--
	W: CN, JP, US				
	RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	EP 850255	A1	19980701	EP 1996-931022	19960904 <--

R: BE, DE, ES, FR, GB, NL
 CN 1201468 A 19981209 CN 1996-197993 19960904 <--
 JP 11512462 T2 19991026 JP 1996-511622 19960904 <--
 PRAI DE 1995-19533336 A 19950911
 WO 1996-EP3891 W 19960904

OS MARPAT 126:277882

AB Copolymers with 1-butene-propylene molar ratio 1:4-10,000 are prepared by continuous polymerization at 50-120° in the presence of a **catalyst** system comprising a bridged **indene** metallocene compound, a metallocenium ion-forming compound (e.g., an aluminoxane), and optionally AlR₁R₂R₃ (R₁-R₃ = halogen, C₁-12 alkyl). Thus, 1 kg Me aluminoxane-impregnated silica gel was treated with a solution of 5.8 g rac-[(dimethylsilylene)bis(2-methylbenzindenyl)]zirconium dichloride in 1.32 L 1.53M Me aluminoxane toluene solution to give a **catalyst**, which was dried to an orange powder. This **catalyst** (10 g/h) and 30 mmol/h iso-Bu₃Al were fed to a 200-L gas-phase reactor in which 1-butene and propylene were copolymerized at 60°/24 bars for 48 h. When the mole fraction of butene in the feed was 10.4%, the polymer had average particle size 1.32 mm, butene content 2.2 mol%, m.p. 135.3°, intrinsic viscosity (Decalin, 135°) 2.21 dL/g, and polydispersity 1.74.

L9 ANSWER 62 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1997:34007 CAPLUS

DN 126:61362

TI Propylene-based elastomers and their synthesis

IN Imuda, Junichi; Hashimoto, Mikio

PA Mitsui Petrochemical Industries, Co., Ltd., Japan; Mitsui Chemicals Inc.

SO Jpn. Kokai Tokkyo Koho, 24 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 08283343	A2	19961029	JP 1995-87248	19950412 <--
	JP 3570772	B2	20040929		
	JP 2004099909	A2	20040402	JP 2003-379895	20031110
PRAI	JP 1995-87248	A3	19950412		

OS MARPAT 126:61362

AB Propylene elastomers with good stiffness, heat, scratch, and blocking resistance, transparency, and heat sealability comprise propylene units 50-95 mol% and 1-butene units 5-50 mol% and have limiting viscosity 0.1-12 dL/g (135° in decalin), mol. weight distribution Mw/Mn <3 according to gel permeation chromatog. anal., and parameter B, which indicates the randomness of the monomer distribution in a polymer, 1.0-1.5. The triad tacticity of the polymers, which indicates the stereo regularity of the polymers are studied by using ¹³C NMR spectra. A polymer with butene content 8.2 mol%, limiting viscosity 1.82 dL/g, Mw/Mn 2.0, and B value 1.0 was prepared by polymerizing propylene and 1-butene using catalysts including dimethylsilylenebis(2-methyl- α -acenaphtho-1-indenyl)zirconium dichloride, triisobutylaluminum.

L9 ANSWER 63 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1997:14843 CAPLUS

DN 126:47368

TI Preparation of metallocenes containing a heterocycle as cocatalysts for **polymerization** of olefins

IN Kueber, Frank; Riedel, Michael; Bachmann, Bernd; Winter, Andreas

PA Hoechst A.-G., Germany

SO Eur. Pat. Appl., 19 pp.

CODEN: EPXXDW

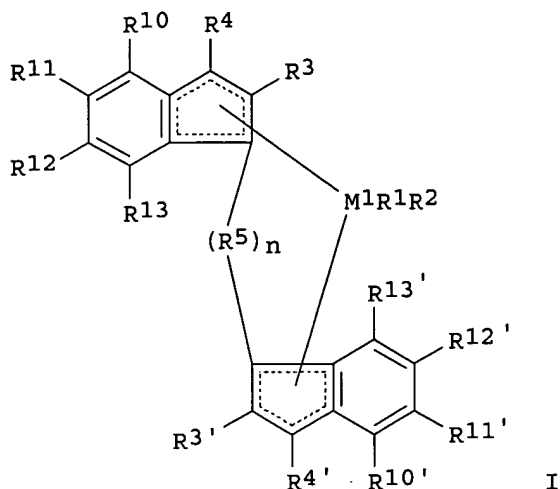
DT Patent

LA German

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 743317	A2	19961120	EP 1996-107322	19960509 <--
	EP 743317	A3	19970709		

EP 743317	B1	20020828		
R: AT, BE, DE, ES, FR, GB, IT, NL				
DE 19517851	A1	19961121	DE 1995-19517851	19950516 <--
AT 222916	E	20020915	AT 1996-107322	19960509
ES 2182927	T3	20030316	ES 1996-107322	19960509
CA 2176687	AA	19961117	CA 1996-2176687	19960515 <--
BR 9602275	A	19980113	BR 1996-2275	19960515 <--
JP 08333379	A2	19961217	JP 1996-121366	19960516 <--
US 5840947	A	19981124	US 1996-648820	19960516 <--
PRAI DE 1995-19517851	A	19950516		
OS MARPAT 126:47368				
GI				



AB Metallocenes comprising a heterocycle and olefin polymerization catalysts containing them are claimed. The metallocenes have a formula $R_5n Cp_1 Cp_2 M_1 R_1 R_2$, wherein Cp_1 and Cp_2 = same or different substituted or unsubstituted cyclopentadienyls; $n = 0, 1$; R_5 = bridge; M_1 = metal of Groups IVB, VB or VIB; R_1 and R_2 = same or different H, C1-40-carbon containing group. Moreover, one or both Cp_1 and Cp_2 are substituted cyclopentadienyls carrying a C3-30-cyclic substituent containing at least one heteroatom, or an annulated C2-30-carbon containing ring system containing at least one heteroatom. I are claimed, in which the symbols indicated above have the same meaning; R_3, R_3' = same or different H, halogen, C1-10 alkyl that can be halogenated, C6-14 aryl that can be halogenated, NR72, SR7, OSiR73, SiR73, PR72 (R_7 = halogen, C1-10 alkyl, C6-14 aryl); $R_{10}, R_{11}, R_{12}, R_{13}, R_{10}', R_{11}', R_{12}', R_{13}'$ = same or different H, C1-40-hydrocarbon substituents, or 2 or more together form a cyclic C4-30-hydrocarbon substituent containing at least one heteroatom or an annulated C2-30-carbon containing ring system containing at least one heteroatom. Detailed preps. are given for dimethylsilanediybis(2-methyl-4-(2-pyridyl)indenyl)zirconium dichloride and dimethylsilanediybis(2-methyl-4-(3-quinolyl)indenyl)zirconium dichloride. Olefin-polymerization catalysts containing the above-described compds. and an aluminoxane cocatalyst are claimed.

L9 ANSWER 64 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1996:634898 CAPLUS

DN 125:276055

TI Diastereoselective Synthesis, Molecular Structure, and Solution Dynamics of meso- and rac-[Ethylenebis(4,7-dimethyl-η⁵-1-indenyl)]zirconium Dichloride Isomers and Chain Transfer Reactions in Propene Polymerization with the rac Isomer

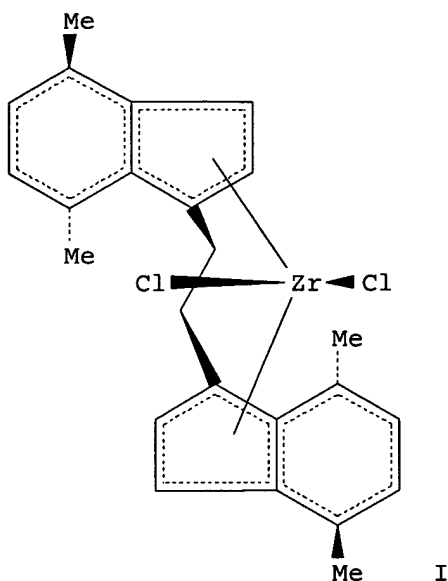
AU Resconi, Luigi; Piemontesi, Fabrizio; Camurati, Isabella; Balboni, Davide; Sironi, Angelo; Moret, Massimo; Rychlicki, Helena; Zeigler, Robert

CS G. Natta Research Center, Montell Italia, Ferrara, I-44100, Italy

SO Organometallics (1996), 15(23), 5046-5059

CODEN: ORGND7; ISSN: 0276-7333

PB American Chemical Society
 DT Journal
 LA English
 OS CASREACT 125:276055
 GI



AB The known *rac*-[ethylenebis(4,7-dimethyl- η^5 -1-indenyl)]ZrCl₂ (2r; 1 enantiomer shown as I) and its *meso* isomer (2m) were compared with the prototypal chiral isospecific *rac*-[ethylenebis(η^5 -1-indenyl)]ZrCl₂ (1r) and its aspecific *meso* isomer 1m in terms of mol. structures, solution dynamics, and ligand substitution effect on polymerization performance. In liquid propene at 50°, 2r/MAO produces iPP with appreciably higher isotacticity but lower mol. weight and regiospecificity than 1r/MAO. The lower mol. weight obtained with 2r in liquid monomer is due to predominant chain transfer to the monomer after a secondary propene insertion, producing >90% *cis*-2-butenyl- end groups. At lower propene concentration, 2r/MAO allows both β -H transfer after a primary insertion and β -Me transfer. The low-activity 2m/MAO catalyst produces low mol. weight aPP. The diastereoselective synthesis of 2r,m via the corresponding *rac*- and *meso*-bis(4,7-dimethyl-1-(trimethylsilyl)-3-indenyl)ethane is reported. The crystal and mol. structures of *meso*-bis(4,7-dimethyl-1-(trimethylsilyl)-3-indenyl)ethane, 2r, and 2m, were determined

L9 ANSWER 65 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN
 AN 1996:584658 CAPLUS
 DN 125:276661

TI ansa-Metallocene derivatives. XXXIII. 2-Dimethylamino-substituted bis-indenyl zirconium dichloride complexes with and without a dimethylsilyl bridge: syntheses, crystal structures and properties in propene polymerization catalysis

AU Barsties, Elke; Schaible, Stefan; Prosenc, Marc-Heinrich; Rief, Ursula; Roell, Werner; Weyand, Oliver; Dorer, Birgit; Brintzinger, Hans-Herbert
 CS Fakultät fuer Chemie, Universitaet Konstanz, Konstanz, D-78464, Germany
 SO Journal of Organometallic Chemistry (1996), 520(1-2), 63-68
 CODEN: JORCAI; ISSN: 0022-328X

PB Elsevier
 DT Journal
 LA English

AB Bis[2-(dimethylamino)indenyl]zirconium dichloride and the dimethylsilyl-bridged derivative were prepared by reaction of the corresponding ligand lithium salts with ZrCl₄ in toluene. Diffractometric structure detns. reveal C₂-sym. complex geometries for both complexes. An increased

electron d. at the Zr center of the complexes is indicated by reduction potentials which are 0.2-0.4 V more neg. than those of their unsubstituted analogs. When activated with Me aluminoxane in toluene solution, the dimethylsilyl-bridged complex catalyzes the polymerization of propene to polymers with a microstructure comparable with that of polymers produced with other dimethylsilyl-bridged bis(indenyl)zirconium complexes, but with a substantially increased fraction of i-Pr end groups derived from alkyl exchange between Zr-polymer and Al-Me species.

L9 ANSWER 66 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1996:563503 CAPLUS

DN 125:222171

TI Preparation of alkylidenebis(cyclopentadienyl) metallocene compounds and their use in catalysis of olefin **polymerization**

IN Resconi, Luigi; Piemontesi, Fabrizio; Nifant ev, Ilya E.; Ivchenko, Pavel V.

PA Montell Technology Company B.V., Neth.

SO PCT Int. Appl., 39 pp.

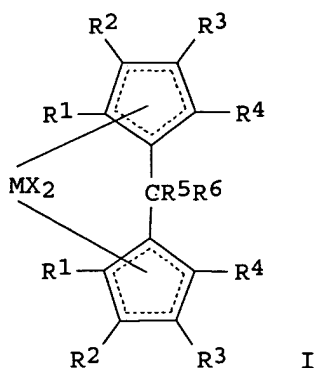
CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
PI	WO 9622995	A1	19960801	WO 1996-EP171	19960117	<--
	W: AU, BG, BR, CA, CN, CZ, FI, HU, JP, KR, MX, NO, PL, RO, RU, TR, UA, VN					
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE					
	CA 2186232	AA	19960801	CA 1996-2186232	19960117	<--
	AU 9645366	A1	19960814	AU 1996-45366	19960117	<--
	AU 700256	B2	19981224			
	EP 751946	A1	19970108	EP 1996-901285	19960117	<--
	EP 751946	B1	20011205			
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, NL, PT, SE					
	CN 1150430	A	19970521	CN 1996-190226	19960117	<--
	CN 1075076	B	20011121			
	JP 09510994	T2	19971104	JP 1996-522594	19960117	<--
	RU 2177948	C2	20020110	RU 1996-121252	19960117	
	ES 2167539	T3	20020516	ES 1996-901285	19960117	
	PL 185055	B1	20030228	PL 1996-316387	19960117	
	BR 9606373	A	20040629	BR 1996-6373	19960117	
	ZA 9600485	A	19960813	ZA 1996-485	19960122	<--
	IL 116853	A1	20000928	IL 1996-116853	19960122	<--
	US 6051728	A	20000418	US 1996-599483	19960123	<--
	FI 9603759	A	19960920	FI 1996-3759	19960920	<--
	NO 9603954	A	19960920	NO 1996-3954	19960920	<--
	US 6518386	B1	20030211	US 2000-481047	20000111	
	CN 1355256	A	20020626	CN 2001-120895	20010607	
	US 2003120015	A1	20030626	US 2002-269699	20021011	
PRAI	IT 1995-MI99	A	19950123			
	WO 1996-EP171	W	19960117			
	US 1996-599483	A3	19960123			
	US 2000-481047	A3	20000111			
OS	CASREACT 125:222171; MARPAT 125:222171					
GI						



AB A class of metallocene compds. I having two cyclopentadienyl rings bridged by an alkylidene group and a method of preparation are disclosed. In I, the R1, R2, R3, R4 = same or different H, C1-20 alkyl, C3-20 cycloalkyl, C2-20 alkenyl, C6-C20 aryl, C7-20 alkylaryl, C7-20 arylalkyl which can contain Si or Ge atoms, R3 being different from R2 and from H, and wherein R1 and R2 on the same cyclopentadienyl ring can form a ring having 5-8 C atoms; R5 = H, CHR7R8; R6 = C6-20 aryl, CHR9R10; R5 and R6 can form a ring having 3-8 C atoms which can contain hetero atoms; R7, R8, R9, R10 are same or different C1-20 alkyl, C3-20 cycloalkyl, C2-20 alkenyl, C6-C20 aryl, C7-20 alkylaryl, C7-20 arylalkyl which can contain hetero atoms such as N, P, O or S and 2 R7, R8, R9, R10 substituents can form a ring having 3-8 C atoms which can contain hetero atoms; M = Group 3-6, lanthanide or actinide metals; X = same or different H, halogen, R, OR, SR, NR2, PR2 wherein R are C1-20 alkyl, C3-20 cycloalkyl, C2-20 alkenyl, C6-C20 aryl, C7-20 alkylaryl, C7-20 arylalkyl which can contain Si or Ge atoms. For example, rac-isopropylidenebis(3-trimethylsilylindenyl)zirconium dichloride can be made in 32% yield by adding 22 mL of 2.0M BuLi in pentane to 20 mmol 2,2-bis(3-trimethylsilylindenyl)propane in 100 mL ether at -20°; allowing the suspension to warm to room temperature and then cooling it to -40°; adding Et3SnCl; separating the organic layer; evaporating the solvent; adding 50 mL toluene; and adding 20 mmol ZrCl4 and heating at 80°. These metallocene compds. can be used as **catalyst** components for the polymerization of olefins. In particular, by polymerizing propylene in the presence of a **catalyst** based on these metallocene compds., polymers having very high isotactic indexes, high mol. wts. and narrow mol. weight distributions can be obtained in high yields.

L9 ANSWER 67 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1996:465130 CAPLUS

DN 125:247996

TI Improved method for the synthesis of dimethylsilylbisindenylzirconium dichloride as a homogeneous **catalyst** for olefin **polymerization**

AU Su, Liming; Zhou, Song; He, Dawei

CS Inst. Chem., Academia Sinica, Beijing, Peop. Rep. China

SO Huaxue Tongbao (1996), (3), 53-55

CODEN: HHTPAU; ISSN: 0441-3776

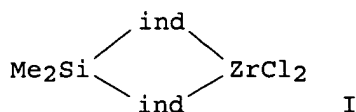
PB Kexue

DT Journal

LA Chinese

OS CASREACT 125:247996

GI



AB The title complex (I; ind = **indene**) having higher catalytic activity for olefin polymerization is prepared by an improved process. A solution of

MeLi/Et₂O was added dropwise to **indene** in Et₂O at -5° under N, the mixture was stirred at room temperature, cooled to -15°, to which was added Me₂SiCl₂ in Et₂O with stirring to room temperature to give 42% Me₂Si(ind)₂, which was treated with BuLi/hexane and the resulting di-Li salt was quickly added to a suspension of ZrCl₄ in CH₂Cl₂ at -78° with stirring to room temperature to give 26% I, vs. 11-14% from a reference

L9 ANSWER 68 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1996:106437 CAPLUS

DN 124:118978

TI Manufacture of novel metallocenes and their use as catalysts for **polymerization** of olefins

IN Schottenberger, Herwig; Ernst, Eberhard; Reusner, Jens; Buchmeiser, Michael; Neisl, Wolfgang; Angleitner, Herbert; Elsner, Olaf

PA PCD Petrochemie Danubia Deutschland GmbH, Germany

SO Ger. Offen., 17 pp.

CODEN: GWXXBX

DT Patent

LA German

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 4417542	A1	19951123	DE 1994-4417542	19940519 <--
PRAI	DE 1994-4417542		19940519		
OS	MARPAT 124:118978				
GI					

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB Metallocenes [I; M = Ti, Zr, Hf, V, Nb, Ta, lanthanide; R₁ = C, Si, Ge, Sn; R₂, R₃ = C₁-10 alkyl, C₁-10 alkoxy, C₆-10 aryl, H, halo, etc.; L₁, L₂ = (un)substituted hydrocarbon residue comprising ≥1 (fused) ring with ≥1 cyclopentadienyl and ≥1 ferrocene or ruthenocene unit which can form a sandwiched structure with M; L₂ can be a specified amido, phosphido, or arsenido structure; A, B = any of definitions for R₂, R₃; n = 0-4 with a proviso], useful as (supported) olefin polymerization catalysts preferably in combination with aluminoxanes, were prepared by reaction of compds. II (A, B, L₂, L₂, R₁, n as above; M₁ = alkali or alkaline earth metal) with organometallic halides MX₂R₂R₃ (M, R₂, R₃ = as above; X = halo). Thus, 0.28 mL n-BuLi (2M in pentane) was added to a solution of 0.205 g ferroceno[2,3]**indene** in 20 mL THF at -80°, the solution was warmed up to room temperature then cooled to -80°, treated with 1.15 mL Me₂SiCl₂, the solvent was removed in vacuo, the residue was redissolved in 20 mL THF, cooled to -80°, and treated with 0.40 mL of Na cyclopentadienide solution (2M) in THF. The mixture was warmed up to room temperature, cooled to -80°, treated with 0.80 mL n-BuLi (2M in pentane), deprotonation was accomplished at room temperature, the mixture was cooled to -50°, treated with 285 mg ZrCl₄•2THF (in 40 mL THF), and the whole stirred for 2 h at 65°, then for 18 h at room temperature, and treated for 45 min with ultrasound to give 374 mg title **catalyst** (III). Polymerization of liquid propylene in presence of Me aluminoxane and III at 70° under inert atmospheric gave polypropylene with weight-aw. mol. weight 6000 g/mol and a Mw/Mn ratio 3.0.

L9 ANSWER 69 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1995:996646 CAPLUS

DN 124:88148

TI Metallocenes and their use as catalysts for olefin **polymerization**

IN Bishop, Clyde E.; Jones, Robert L.; Raman, Krishna; Dang, Vu Anh; Yu, Lin-Chen; Resconi, Luigi; Dall'Occo, Tiziano; Galimberti, Maurizio

PA Spherilene S.p.A., Italy

SO PCT Int. Appl., 62 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9527717	A1	19951019	WO 1995-EP1200	19950331 <--
	W: CA, CN, FI, JP, KR, RU				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	CA 2164599	AA	19951019	CA 1995-2164599	19950331 <--
	EP 702687	A1	19960327	EP 1995-913890	19950331 <--
	EP 702687	B1	20011205		
	R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, NL, SE				
	CN 1128537	A	19960807	CN 1995-190451	19950331 <--
	JP 09501184	T2	19970204	JP 1995-526050	19950331 <--
	ES 2167424	T3	20020516	ES 1995-913890	19950331
	US 6211108	B1	20010403	US 1995-417735	19950405 <--
	FI 9505822	A	19960118	FI 1995-5822	19951204 <--
	US 2001012877	A1	20010809	US 2001-823393	20010330 <--
PRAI	IT 1994-MI645	A	19940406		
	WO 1995-EP1200	W	19950331		
	US 1995-417735	A3	19950405		
OS	MARPAT 124:88148				
AB	Bridged or unbridged metallocenes are prepared in which the cyclopentadienyl ligands have 2 or 4 adjacent substituents which complete 1 or 2 C4-8 cycloalkylene groups. The metallocenes are useful as catalyst components for the polymerization of olefins, especially the (co)polymerization of ethylene and the polymerization of propene. Cyclohexene and BzOH were used to prepare 2,3-cyclotetramethyleneindene which was reacted with Me2SiCl2 to give bis(2,3-cyclotetramethyleneinden-1-yl)dimethylsilane (I). Reacting I with ZrCl4 gave dimethylsilanediylbis(2,3-cyclotetramethyleneinden-1-yl)zirconium dichloride which was used with iso-Bu3Al in a catalyst system for the polymerization of ethylene.				
L9	ANSWER 70 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN				
AN	1995:987999 CAPLUS				
DN	124:9664				
TI	Manufacture of polyolefins in the presence of metallocenes				
IN	Howard, Philip; Maddox, Peter James; Partington, Stephen Roy				
PA	BP Chemicals Ltd., UK				
SO	Eur. Pat. Appl., 19 pp.				
	CODEN: EPXXDW				
DT	Patent				
LA	English				
FAN.CNT	1				
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 676421	A1	19951011	EP 1995-302124	19950328 <--
	EP 676421	B1	20060215		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE				
	EP 1134238	A1	20010919	EP 2001-201693	19950328 <--
	EP 1134238	B1	20050907		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE				
	AT 304025	E	20050915	AT 2001-201693	19950328
	PT 1134238	T	20051130	PT 2001-201693	19950328
	AT 317858	E	20060315	AT 1995-302124	19950328
	ES 2248223	T3	20060316	ES 2001-201693	19950328
	CA 2146205	AA	19951008	CA 1995-2146205	19950403 <--
	CA 2146205	C	20060124		
	JP 08048711	A2	19960220	JP 1995-82960	19950407 <--
	US 6300437	B1	20011009	US 1997-904437	19970731 <--
	US 6258912	B1	20010710	US 1999-353653	19990715 <--
	JP 2005089769	A2	20050407	JP 2004-368236	20041220
PRAI	GB 1994-6895	A	19940407		
	GB 1994-17365	A	19940826		
	US 1995-410986	B1	19950327		
	EP 1995-302124	A3	19950328		
	JP 1995-82960	A3	19950407		
	US 1996-669800	B1	19960627		
	US 1997-904437	A3	19970731		
OS	MARPAT 124:9664				
AB	Polyolefins having at least 0.01 long chain branches (LCB)/1000 carbon atoms along the polymer backbone as measured by flow activation and a mol.				

weight distribution greater than 2.5 comprises polymerization in the presence of a metallocene of Zr, Ti, or Hf and (substituted) (hydrogenated) **indene** having a C1-20 alkylene, dialkylsilyl, dialkylgermyl, alkylphosphine, of amine bridge. Polyolefins prepared from such a process show specific flow activation energy/LCB relationships for improved processability. A typical **catalyst** was manufactured from a 6.4 mL 2.45 M Et₂AlOMe-PhMe solution, 2.2 g silica, and 0.104 mol ethylenebis[bis(indenyl)]zirconium dichloride.

L9 ANSWER 71 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1995:986319 CAPLUS

DN 124:9649

TI Supported metallocene complexes with heterofunctional groups on the cyclopentadienyl system for use as **polymerization** catalysts

IN Langhauser, Franz; Fischer, David; Kerth, Juergen; Schweier, Guenther; Barsties, Elke; Brintzinger, Hans-Herbert; Schaible, Stefan; Roell, Werner

PA BASF A.-G., Germany

SO Eur. Pat. Appl., 15 pp.

CODEN: EPXXDW

DT Patent

LA German

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 670336	A1	19950906	EP 1995-102479	19950222 <--
	EP 670336	B1	19970502		
	R: BE, DE, ES, FR, GB, IT, NL				
	DE 4406964	A1	19950907	DE 1994-4406964	19940303 <--
	ES 2100752	T3	19970616	ES 1995-102479	19950222 <--
	JP 08034812	A2	19960206	JP 1995-40783	19950228 <--
	US 5627246	A	19970506	US 1995-396716	19950301 <--
	ZA 9501725	A	19960902	ZA 1995-1725	19950302 <--
PRAI	DE 1994-4406964	A	19940303		

OS MARPAT 124:9649

AB Catalysts for polymerization of olefins are prepared by depositing bridged Ti, Zr, Hf, V, Nb, or Ta metallocene derivs. of specified structure on fine, silanized supports. Treating 2-(dimethylamino)**indene** in Et₂O with BuLi and then with Me₂SiCl₂ gave 48% 1,1'-(dimethylsilylene)bis[2-(dimethylamino)**indene**], treatment of which with BuLi and ZrCl₄ gave 36% corresponding zirconocene derivative (I). Use of I with aluminoxanes in the polymerization of C₃H₆ is exemplified.

L9 ANSWER 72 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1995:928192 CAPLUS

DN 123:314849

TI Indenyl transition metal complexes for olefin **polymerization** catalysts

IN Imuta, Junichi; Fukuoka, Daisuke; Yoshida, Masayasu; Saito, Junji; Fujita, Terunori; Tashiro, Takashi; Kawaai, Koji; Ueda, Takashi; Kiso, Yoshihisa

PA Mitsui Petrochemical Industries, Ltd., Japan

SO Can. Pat. Appl., 66 pp.

CODEN: CPXXEB

DT Patent

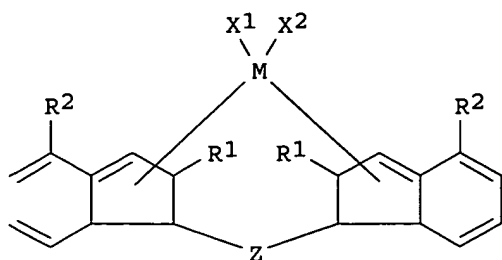
LA English

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	CA 2135561	AA	19950513	CA 1994-2135561	19941110 <--
	CA 2135561	C	19970422		
	JP 07138312	A2	19950530	JP 1993-283778	19931112 <--
	JP 3423378	B2	20030707		
	US 5859272	A	19990112	US 1997-788568	19970124 <--
PRAI	JP 1993-377819	A	19931112		
	JP 1993-283778		19931112		
	US 1994-338810	A3	19941103		

OS MARPAT 123:314849

GI



I

AB Title complexes I [M = Group IVA, VA, or VIA metal; X1, X2 = H, halo, C1-20 (halogenated) hydrocarbyl, or O- or S-containing group; R1 = C1-20 hydrocarbyl; R2 = halogenated C1-20-hydrocarbyl-substituted C6-16 aryl; Z = (halogenated) C1-20 hydrocarbylene, divalent Si-, Ge-, or Sn-containing group; O, CO, S, SO, SO₂, NR₃, PR₃, P(O)R₃, BR₃, or AlR₃, R₃ = H, halo, or (halogenated) C1-20 hydrocarbyl] are useful as highly active catalysts in the polymerization of olefins giving polyolefins having a high m.p. and a high mol. weight I are used with organoaluminum cocatalysts or compds. that form ion pairs with I, and the catalysts may be supported on inorg. compds. A typical **catalyst** was manufactured by lithiation of 2-methyl-4-(p-trifluoromethylphenyl)indene, reaction of the lithiated product with Me₂SiCl₂, lithiation of the resulting product, and complexation of the 2nd lithiated product with ZrCl₂.

L9 ANSWER 73 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1995:884101 CAPLUS

DN 123:287160

TI Metallocenes, their use as olefin **polymerization** catalysts, and the polymers produced

IN Winter, Andreas; Kueber, Frank; Aulbach, Michael; Bachmann, Bernd; Klein, Robert; Kuehleln, Klaus; Spaleck, Walter; Kohlpaintner, Christian

PA Hoechst A.-G., Germany

SO Eur. Pat. Appl., 30 pp.

CODEN: EPXXDW

DT Patent

LA German

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 659757	A1	19950628	EP 1994-120070	19941219 <--
	EP 659757	B1	20020327		
	R: AT, BE, DE, ES, FR, GB, IT, NL				
	DE 4344689	A1	19950629	DE 1993-4344689	19931227 <--
	EP 1188763	A2	20020320	EP 2001-114147	19941219
	EP 1188763	A3	20040102		
	EP 1188763	B1	20050309		
	R: AT, BE, DE, ES, FR, GB, IT, NL				
	AT 215091	E	20020415	AT 1994-120070	19941219
	ES 2174860	T3	20021116	ES 1994-120070	19941219
	AT 290536	E	20050315	AT 2001-114147	19941219
	ES 2238364	T3	20050901	ES 2001-114147	19941219
	US 5532396	A	19960702	US 1994-361762	19941222 <--
	BR 9405252	A	19950801	BR 1994-5252	19941226 <--
	RU 2142466	C1	19991210	RU 1994-45142	19941226 <--
	CN 1107854	A	19950906	CN 1994-107627	19941227 <--
	CN 1068332	B	20010711		
	JP 08067689	A2	19960312	JP 1994-324968	19941227 <--
	US 5576260	A	19961119	US 1995-475938	19950607 <--
	US 5612428	A	19970318	US 1995-477853	19950607 <--
PRAI	DE 1993-4344689	A	19931227		
	EP 1994-120070	A3	19941219		
	US 1994-361762	A3	19941222		

OS MARPAT 123:287160

GI

AB The preparation of metallocenes I [M2 = Group IVB, VB, VIB metal; R1 = H, C1-10 alkyl, alkoxy, C6-10 aryl, aryloxy, C2-10 alkenyl, C7-40 arylalkyl, C7-40 alkylaryl, C8-40 arylalkenyl, halo; R2 = H, C1-10 alkyl, C6-10 aryl, C2-10 alkenyl, C7-40 arylalkyl, C7-40 alkylaryl, C8-40 arylalkenyl, amino, alkoxy, thio, siloxy, silyl, phosphinyl, etc.; R3, R4 = H, halo, C1-20 (fluoro)alkyl, C6-30 (fluoro)aryl, C1-20 alkoxy, C2-20 alkenyl, C7-40 arylalkyl, C8-40 arylalkenyl, C7-40 alkylaryl, amino, alkoxy, thio, siloxy, silyl, phosphinyl; R5 = halo, C1-10 alkyl, C6-10 aryl, C2-20 alkenyl, C7-40 arylalkyl, C7-40 alkylaryl, C8-40 arylalkenyl, amino, alkoxy, thio, siloxy, silyl, phosphinyl, etc.; R6 = H, halo, C1-10 alkyl, C6-10 aryl, C2-10 alkenyl, C7-40 arylalkyl, C7-40 alkyloxy, C8-40 arylalkenyl, amino, alkoxy, thio, siloxy, silyl, phosphinyl, etc.; R7 = hetero atom substituted alkenyl, Group IIIA or IVA metal substituted organodiy, etc.; R8, R9 = H, halo, C1-20 (fluoro)alkyl, C6-30 (fluoro)aryl, C1-20 alkoxy, C2-20 alkenyl, C7-40 arylalkyl, C8-40 arylalkenyl, C7-40 alkylaryl; m, n, m + n = 0-2], useful as olefin polymerization catalysts, is described. Thus, lithiation of 2-methyl-7-phenylindene with BuLi in hexane followed by silylation with Me2SiCl2 and treatment with methylindenyllithium gave a ligand system which upon further lithiation with BuLi and metalation with ZrCl4 gave dimethylsilanediyl(2-methyl-1-indenyl)(2-methyl-4-phenyl-1-indenyl)zirconium dichloride (II). II was used as **catalyst** with methylaluminoxane solution for polymerization of propylene.

L9 ANSWER 74 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1995:820580 CAPLUS

DN 123:199677

TI Amidosiladiyl-bridged metallocene catalysts and their manufacture and use in **polymerization** of olefins

IN Murata, Masahide; Burkhardt, Terry John

PA Exxon Chemical Patents, Inc., USA

SO PCT Int. Appl., 30 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9506071	A1	19950302	WO 1994-US9054	19940810 <--
	W: CA, CN, JP, KR				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	US 5486585	A	19960123	US 1993-112491	19930826 <--
	EP 739361	A1	19961030	EP 1994-925817	19940810 <--
	EP 739361	B1	19990929		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE				
	AT 185154	E	19991015	AT 1994-925817	19940810 <--
	ES 2139094	T3	20000201	ES 1994-925817	19940810 <--
	US 5541350	A	19960730	US 1995-515627	19950816 <--
	GR 3032161	T3	20000427	GR 1999-403247	19991215 <--
PRAI	US 1993-112491	A	19930826		
	WO 1994-US9054	W	19940810		

OS MARPAT 123:199677

AB Metallocenes of Groups IIIB, IVB, VB, and VIB metals having mono- or diamidosiladiyl bridges are useful in polymerization of olefins to polymers of relatively narrow mol. weight A typical **catalyst** was manufactured by lithiating 6,6-dimethylfulvene, reacting the intermediate with SiCl4, reacting the silylated product with lithiated azabicyclo[3,2,2]nonane, and complexing the latter intermediated with ZrCl4.

L9 ANSWER 75 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1995:772666 CAPLUS

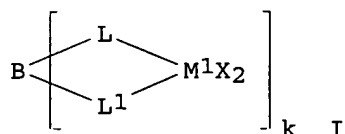
DN 123:169902

TI Preparation of metallocene derivatives as olefin **polymerization** catalysts

IN Kueber, Frank; Aulbach, Michael; Bachmann, Bernd; Spaleck, Walter; Winter, Andreas

PA Hoechst A.-G., Germany
 SO Eur. Pat. Appl., 36 pp.
 CODEN: EPXXDW
 DT Patent
 LA German
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 654476	A1	19950524	EP 1994-118188	19941118 <--
	EP 654476	B1	20010124		
	R: AT, BE, DE, ES, FR, GB, IT, NL, SE				
	DE 4340018	A1	19950601	DE 1993-4340018	19931124 <--
	DE 4344687	A1	19950629	DE 1993-4344687	19931227 <--
	DE 4344708	A1	19950629	DE 1993-4344708	19931227 <--
	IN 187783	A	20020622	IN 1994-MA1130	19941117
	AT 198893	E	20010215	AT 1994-118188	19941118 <--
	ES 2154664	T3	20010416	ES 1994-118188	19941118 <--
	FI 9405486	A	19950525	FI 1994-5486	19941122 <--
	CA 2136493	AA	19950525	CA 1994-2136493	19941123 <--
	NO 9404491	A	19950526	NO 1994-4491	19941123 <--
	AU 9478991	A1	19950601	AU 1994-78991	19941123 <--
	AU 678862	B2	19970612		
	ZA 9409285	A	19950630	ZA 1994-9285	19941123 <--
	BR 9404707	A	19950801	BR 1994-4707	19941123 <--
	CN 1107162	A	19950823	CN 1994-118933	19941123 <--
	CN 1075819	B	20011205		
	US 5585508	A	19961217	US 1994-344730	19941123 <--
	RU 2147587	C1	20000420	RU 1994-41192	19941123 <--
	JP 07215987	A2	19950815	JP 1994-290088	19941124 <--
	JP 3580874	B2	20041027		
	US 5693730	A	19971202	US 1995-473079	19950607 <--
	US 5776851	A	19980707	US 1995-480165	19950607 <--
PRAI	DE 1993-4340018	A	19931124		
	DE 1993-4344687	A	19931227		
	DE 1993-4344708	A	19931227		
	US 1994-344730	A3	19941123		
OS	CASREACT 123:169902; MARPAT 123:169902				
GI					



AB The preparation of multinuclear metallocene derivs. I [M1 = Group IVb, Vb, VIb transition metal; X = same or different H, C1-10 alkyl, alkoxy, C6-10 aryl, C6-10 aryloxy, C2-10 alkenyl, C7-40 arylalkyl, C7-40 alkylaryl, C8-40 arylalkenyl, OH, halo, pseudohalo; L, L1 = same or different π -ligand, electron donor; $k \geq 2$; B = substituted organoelement or hydrocarbon, etc.], useful as **catalyst** for olefin polymerization, is described. Thus, lithiation of 2-methyl-7-phenylindene with BuLi in PhMe followed by treatment with 1,6-bis(methyldichlorosilyl)hexane gave a ligand system which on further lithiation with BuLi followed by metalation with ZrCl4 gave 47% title **catalyst**, 1,6-{bis[methylsilylbis(2-methyl-7-phenylindenyl)zirconium dichloride]}hexane. The polymerization of olefins, e.g. propylene, using the prepared catalysts were also described.

L9 ANSWER 76 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN
 AN 1995:769814 CAPLUS
 DN 123:314827

TI Transition metal compounds as catalysts for manufacture of olefin polymers
 IN Yabunouchi, Nobuhiro; Yokota, Kiyohiko; Watanabe, Masami; Okamoto, Takuji; Tani, Noriyuki

PA Idemitsu Kosan Co., Ltd., Japan
 SO PCT Int. Appl., 95 pp.

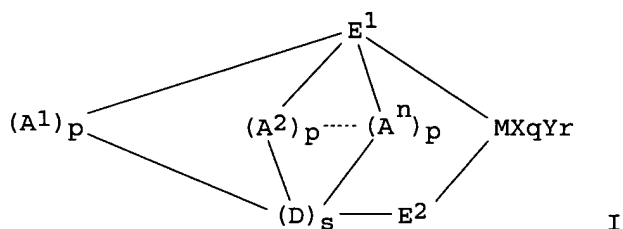
CODEN: PIXXD2

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9509172	A1	19950406	WO 1994-JP1626	19940930 <--
	W: CA, JP, KR, US				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	CA 2172635	AA	19950406	CA 1994-2172635	19940930 <--
	EP 721954	A1	19960717	EP 1994-927812	19940930 <--
	R: BE, DE, FR, GB, IT, NL				
	JP 3454827	B2	20031006	JP 1995-510224	19940930
	US 5854165	A	19981229	US 1996-619513	19960329 <--
	US 6171994	B1	20010109	US 1998-184279	19981102 <--
PRAI	JP 1993-245129	A	19930930		
	JP 1993-324208	A	19931222		
	JP 1994-156948	A	19940708		
	WO 1994-JP1626	W	19940930		
	US 1996-619513	A3	19960329		
OS	MARPAT 123:314827				
GI					



AB The title transition metal compds. are useful as a compound of an olefin polymerization **catalyst** or a compound usable as a ligand of the above compound are useful as polymerization catalysts with high activity and an excellent copolymn. performance, providing an olefin polymer having a uniform composition and a narrow mol. weight distribution. The transition metal compound is a multi-bridged transition metal complex represented by general formula (I) wherein M represents a group 3-10 or lanthanoid metal element; E1 and E2 represents each a σ - or π -bonding ligand; X represents a σ -bonding ligand; Y represents a Lewis base; A1 An and D represent each a bridging group; n represents 2 to 4; p represents 1 to 4; q represents 1 to 5 and is equal to the valency of M minus 2; r represents 0 to 3; and s represents 0 to 4. A typical compound, (1,1'-dimethylsilylene)(2,2'-dimethylsilylene)bis(cyclopentadienyl)zirconium dichloride, was used to prepare polyethylene.

L9 ANSWER 77 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1995:761641 CAPLUS

DN 123:169901

TI Preparation of novel transition metal compounds as olefin
polymerization catalyst and process for olefin
polymerization

IN Imuta, Junichi; Fukuoka, Daisuke; Yoshida, Masayasu; Saito, Junji; Fujita, Terunori; Tashiro, Takashi; Kawaai, Koji; Ueda, Takashi; Kiso, Yoshihisa

PA Mitsui Petrochemical Industries, Ltd., Japan

SO Eur. Pat. Appl., 24 pp.

CODEN: EPXXDW

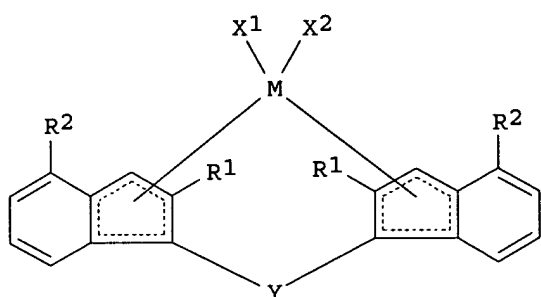
DT Patent

LA English

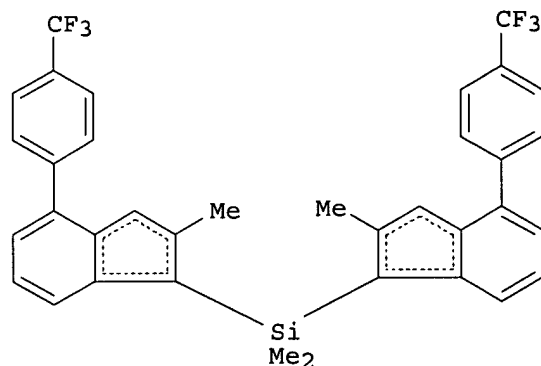
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 653433	A1	19950517	EP 1994-308265	19941109 <--
	EP 653433	B1	19990113		
	R: DE, FR, GB, IT, NL				

JP 07138312	A2	19950530	JP 1993-283778	19931112 <--
JP 3423378	B2	20030707		
US 5616663	A	19970401	US 1994-338810	19941110 <--
KR 163619	B1	19990115	KR 1994-29712	19941112 <--
CN 1105672	A	19950726	CN 1994-117968	19941114 <--
CN 1033510	B	19961211		
US 5859272	A	19990112	US 1997-788568	19970124 <--
PRAI JP 1993-283778	A	19931112		
US 1994-338810	A3	19941103		
OS CASREACT 123:169901; MARPAT 123:169901				
GI				



I



II

AB The preparation of title compds. I (M = Group IVa, Va, or VIa transition metal; R1 = C1-20 hydrocarbon; R2 = C1-20 halogenated hydrocarbon substituted C6-16 aryl; X1, X2 = H, halo, C1-20 hydrocarbon, C1-20 halogenated hydrocarbon, O or S containing organic group; Y = C1-20 divalent hydrocarbon, C1-20 halogenated divalent hydrocarbon, silicon containing divalent group, etc.), useful as **catalyst** for olefin polymerization, is described. Thus, lithiation of silylindene II (preparation given) with BuLi in hexane followed by addition of ZrCl₄ gave title compound I (R1 = Me, R2 = 4-trifluoromethylphenyl, X1 = X2 = Cl, M = Zr, Y = SiMe₂) (III). III catalyzed polymerization of propylene was also described.

L9 ANSWER 78 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1995:664931 CAPLUS

DN 123:113083

TI Transition metal compounds containing bisindenyl groups as catalysts for olefin **polymerization**

IN Fukuoka, Daisuke; Tashiro, Takashi; Kawaai, Koji; Saito, Junji; Ueda, Takashi; Kiso, Yoshihisa; Mizuno, Akira; Kawasaki, Masaaki; Itoh, Masaaki; et al.

PA Mitsui Petrochemical Industries, Ltd., Japan

SO Eur. Pat. Appl., 56 pp.

CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 1

PATENT NO.

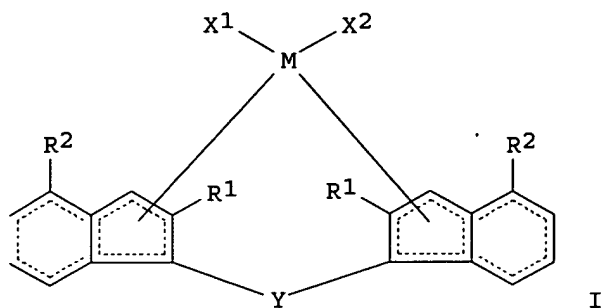
KIND

DATE

APPLICATION NO.

DATE

PI	EP 629632	A2	19941221	EP 1994-304054	19940606 <--
	EP 629632	A3	19950308		
	EP 629632	B1	20001004		
	R: DE, FR, GB, IT, NL				
	JP 07286005	A2	19951031	JP 1994-121348	19940602 <--
	CA 2125247	AA	19941208	CA 1994-2125247	19940606 <--
	CA 2125247	C	20010220		
	EP 812854	A2	19971217	EP 1997-116897	19940606 <--
	EP 812854	A3	19980429		
	EP 812854	B1	20010816		
	R: DE, FR, GB, IT, NL				
	EP 1070729	A2	20010124	EP 2000-122846	19940606 <--
	EP 1070729	A3	20020123		
	R: DE, FR, GB, IT, NL				
	CN 1103405	A	19950607	CN 1994-105683	19940607 <--
	CN 1048501	B	20000119		
	JP 07149833	A2	19950613	JP 1994-146415	19940628 <--
	JP 2003201317	A2	20030718	JP 2003-16336	19940628
	JP 08073532	A2	19960319	JP 1994-230096	19940926 <--
	JP 3423433	B2	20030707		
	JP 2003238626	A2	20030827	JP 2003-30560	19940926
	CA 2155016	AA	19950601	CA 1994-2155016	19941129 <--
	CA 2155016	C	20051025		
	WO 9514717	A1	19950601	WO 1994-JP1997	19941129 <--
	W: CA, CN, JP, KR, US				
	RW: DE, FR, GB, IT, NL				
	JP 07196734	A2	19950801	JP 1994-294785	19941129 <--
	JP 3432020	B2	20030728		
	EP 682042	A1	19951115	EP 1995-901603	19941129 <--
	EP 682042	B1	19991013		
	R: DE, FR, GB, IT, NL				
	CN 1116852	A	19960214	CN 1994-191013	19941129 <--
	CN 1052734	B	20000524		
	JP 2003176320	A2	20030624	JP 2002-302225	19941129
	JP 3580428	B2	20041020	JP 1994-525845	19941129
	US 5677408	A	19971014	US 1995-448502	19950605 <--
	US 5629254	A	19970513	US 1995-486642	19950607 <--
	US 5658997	A	19970819	US 1995-474658	19950607 <--
	US 5705584	A	19980106	US 1995-477647	19950607 <--
	US 5723640	A	19980303	US 1996-622592	19960326 <--
	US 5710223	A	19980120	US 1996-719540	19960925 <--
	US 5936053	A	19990810	US 1997-870395	19970606 <--
	CN 1249312	A	20000405	CN 1999-106364	19990506 <--
	JP 2004099906	A2	20040402	JP 2003-354112	20031014
PRAI	JP 1993-136253	A	19930607		
	JP 1993-238561	A	19930924		
	JP 1993-250742	A	19931006		
	JP 1993-298744	A	19931129		
	JP 1993-298745	A	19931129		
	JP 1994-25548	A	19940223		
	JP 1994-146414		19940628		
	EP 1994-304054	A3	19940606		
	EP 1997-116897	A3	19940606		
	US 1994-255706	B3	19940607		
	JP 1994-146415	A3	19940628		
	JP 1994-230096	A3	19940926		
	JP 1994-294785	A3	19941129		
	JP 1994-525845	A3	19941129		
	WO 1994-JP1997	W	19941129		
	US 1995-474658	A3	19950607		
	US 1995-477647	A3	19950607		
OS	MARPAT 123:113083				
GI					



AB Compds. I [M = Group IVa, Va, or VIa metal; R1 = C2-6 hydrocarbyl; R2 = C6-16 aryl optionally substituted by halo, C1-20 hydrocarbyl, or organosilyl group; X1-2 = H, halo, C1-20 (halo)hydrocarbyl, O- or S-containing group; Y = divalent C1-20 (halo)hydrocarbyl, divalent Si- or Ge-containing group, O, CO, S, SO2, NR3, PR3, BR3, AlR3, etc.; R3 = H, halo, C1-20 (halo)hydrocarbyl] are useful as catalysts which show high activity in olefin polymerization. The catalysts are especially useful for polymerizing propene or copolymerizing propene with ethylene or C4-20 α -olefins, giving polymers having high triad tacticity of the chains of propene units and a low content of inversely inserted propene units. A catalyst system comprised I (M = Zr; R1 = Et; R2 = Ph; X1-2 = Cl; Y = SiMe2), iso-Bu3Al, and Me aluminoxane.

L9 ANSWER 79 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1995:377074 CAPLUS

DN 122:240708

TI α -Olefin **polymerization catalyst** components and manufacture of polyolefins with high molecular weight and melting point using the same

IN Sugano, Toshihiko; Uchino, Hidefumi; Takahama, Tomohiko

PA Mitsubishi Petrochemical Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 14 pp.

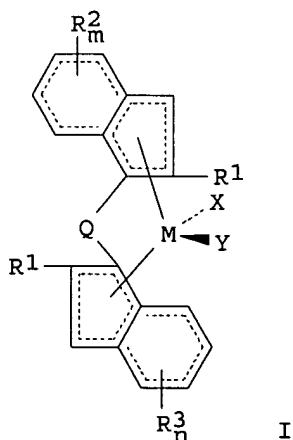
CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 06172433	A2	19940621	JP 1992-324460	19921203 <--
PRAI	JP 1992-324460		19921203		
OS	MARPAT 122:240708				
GI					



AB The title **catalyst** components contain I (R1 = C1-6 hydrocarbyl, C1-12 Si-containing hydrocarbyl; R2, R3 = C1-12 hydrocarbyl, C1-20 Si-containing

hydrocarbyl; m, n = 1-4; Q = C1-20 divalent hydrocarbyl, silylene with or without C1-20 hydrocarbyl group, germylene; X, Y = H, halogen, C1-10 hydrocarbyl, C1-12 Si-, P-, or N-containing hydrocarbyl, C1-10 alkoxy; M = IVB-VIB transition metal). Polypropylene with Mn 11.20 + 104, mol. weight distribution 2.85, and m.p. 153.4° was prepared in the presence of Me aluminoxane and ethylenebis(2,4-dimethylindenyl)zirconium dichloride.

L9 ANSWER 80 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1994:606259 CAPLUS

DN 121:206259

TI Gas phase **polymerization** reaction utilizing soluble unsupported catalysts

IN Brady, Robert Converse, III; Karol, Frederick John; Lynn, Timothy Roger; Jorgensen, Robert James; Kao, Sun Chueh; Wasserman, Eric Paul

PA Union Carbide Chemicals and Plastics Co., Inc., USA

SO Eur. Pat. Appl., 32 pp.

CODEN: EPXXDW

DT Patent

LA English

FAN. CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 593083	A1	19940420	EP 1993-116735	19931015 <--
	EP 593083	B1	19960501		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE				
	US 5317036	A	19940531	US 1992-962119	19921016 <--
	EG 20866	A	20000531	EG 1993-658	19931013 <--
	CA 2108528	AA	19940417	CA 1993-2108528	19931015 <--
	CA 2108528	C	19970909		
	FI 9304579	A	19940417	FI 1993-4579	19931015 <--
	NO 9303720	A	19940418	NO 1993-3720	19931015 <--
	AU 9349028	A1	19940428	AU 1993-49028	19931015 <--
	AU 657076	B2	19950223		
	ZA 9307676	A	19940505	ZA 1993-7676	19931015 <--
	BR 9304244	A	19940705	BR 1993-4244	19931015 <--
	CN 1088939	A	19940706	CN 1993-115022	19931015 <--
	CN 1054859	B	20000726		
	HU 66408	A2	19941128	HU 1993-2924	19931015 <--
	HU 215498	B	19990128		
	AT 137509	E	19960515	AT 1993-116735	19931015 <--
	ES 2089673	T3	19961001	ES 1993-116735	19931015 <--
	KR 164617	B1	19990320	KR 1993-21480	19931015 <--
	SK 279828	B6	19990413	SK 1993-1132	19931015 <--
	IN 182553	A	19990501	IN 1993-MA739	19931015 <--
	CZ 289298	B6	20011212	CZ 1993-2179	19931015 <--
	PL 173786	B1	19980430	PL 1993-300744	19931016 <--
	JP 06192311	A2	19940712	JP 1993-283994	19931018 <--
	JP 2762025	B2	19980604		
PRAI	US 1992-962119	A	19921016		

OS MARPAT 121:206259

AB The title process comprises introducing a polymerization **catalyst** (droplet size 1-1000 µm, containing transition metal coordination compds. and organometallic compds.) into a reaction zone containing unsatd. monomers. An ethylene-hexene copolymer was prepared using a diphenylmethylene(cyclopentadienyl-9-fluorenyl)zirconium dichloride **catalyst** and Me aluminoxane cocatalyst.

L9 ANSWER 81 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1994:484250 CAPLUS

DN 121:84250

TI Process for the preparation of polymers using specific metallocenes

IN Winter, Andreas; Rohrmann, Juergen; Antberg, Martin; Spaleck, Walter; Herrmann, Wolfgang Anton; Riepl, Herbert

PA Hoechst A.-G., Germany

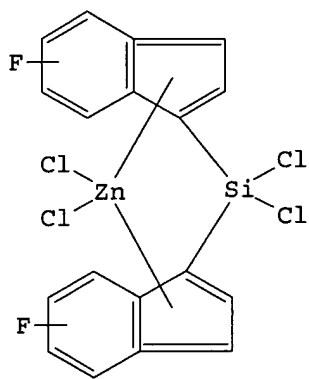
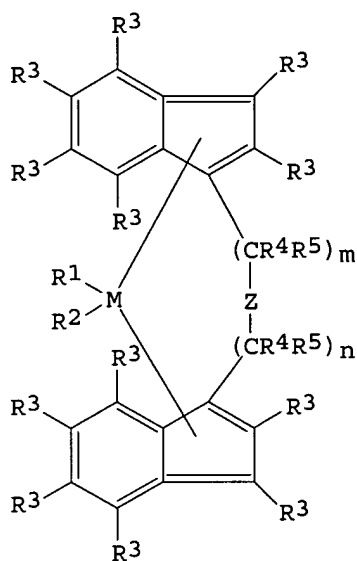
SO Eur. Pat. Appl., 20 pp.

CODEN: EPXXDW

DT Patent

LA German

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 582195	A1	19940209	EP 1993-112057	19930728 <--
	EP 582195	B1	20001220		
	R: AT, BE, CH, DE, ES, FR, GB, IT, LI, LU, NL, SE				
	AT 198207	E	20010115	AT 1993-112057	19930728 <--
	ES 2153368	T3	20010301	ES 1993-112057	19930728 <--
	JP 06157660	A2	19940607	JP 1993-192583	19930803 <--
	US 5504232	A	19960402	US 1993-101627	19930803 <--
	US 5763542	A	19980609	US 1995-475752	19950607 <--
	US 6087292	A	20000711	US 1998-46741	19980324 <--
PRAI	DE 1992-4225648	A	19920803		
	US 1993-101627	A3	19930803		
	US 1995-475752	A3	19950607		
OS	MARPAT 121:84250				
GI					



AB The indenyl metallocenes I (M = Group IVb, Vb, VIb metal; R1,R2 = H, alkyl, alkoxy, aryl, aryloxy, alkenyl, arylalkyl, halogen; R3 = (same or different) H, polar or polarizable element more electroneg. than H, hydrocarbyl containing heteroatom more electrog. than H; Z = O, S, SO, SO2, amino, CO, alkylene, or divalent group containing B, Al, Ge, Sn, P, or Si atoms; R4,R5 = H, halogen, alkyl, fluoroalkyl, aryl, fluoroaryl, alkoxy, alkenyl, arylalkyl, arylalkenyl, alkylaryl) are used for preparation of olefin polymers from RaCH:CHRB (Ra, Rb = H, C1-14-hydrocarbyl; RaRb form aromatic ring) with improved tech. properties. Thus, polymerization of propylene in the presence of II and Me aluminosiloxane gave polypropylene with viscosity number 40 cm3/g, m.p. 143°, and isotacticity index 94.7%. II activity was 67.8 kg polymer/g II-h.

L9 ANSWER 82 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1994:484217 CAPLUS

DN 121:84217

TI Catalysts for the polymerization of olefins

IN Resconi, Luigi; Galimberti, Maurizio; Piemontesi, Fabrizio; Guglielmi, Floriano; Albizzati, Enrico

PA Sherilene S.r.l., Italy

SO Eur. Pat. Appl., 27 pp.

CODEN: EPXXDW

DT Patent

LA English

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 575875	A2	19931229	EP 1993-109585	19930616 <--
	EP 575875	A3	19940727		
	EP 575875	B1	20000809		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, NL, PT, SE				
	AU 9341281	A1	19931223	AU 1993-41281	19930616 <--
	AU 660808	B2	19950706		
	ZA 9304288	A	19940117	ZA 1993-4288	19930616 <--
	HU 66787	A2	19941228	HU 1993-1755	19930616 <--
	HU 217030	B	19991129		
	IN 180811	A	19980321	IN 1993-CA334	19930616 <--
	IL 106042	A1	19990509	IL 1993-106042	19930616 <--
	AT 195326	E	20000815	AT 1993-109585	19930616 <--
	ES 2149792	T3	20001116	ES 1993-109585	19930616 <--
	PT 575875	T	20010131	PT 1993-109585	19930616 <--
	NO 9302238	A	19931220	NO 1993-2238	19930617 <--
	BR 9302392	A	19940111	BR 1993-2392	19930617 <--
	JP 06080713	A2	19940322	JP 1993-146484	19930617 <--
	JP 3330424	B2	20020930		
	RU 2132229	C1	19990627	RU 1993-47795	19930617 <--
	FI 110101	B1	20021129	FI 1993-2802	19930617
	CA 2098763	AA	19931219	CA 1993-2098763	19930618 <--
	CN 1083490	A	19940309	CN 1993-109032	19930618 <--
	CN 1044251	B	19990721		
	US 5565533	A	19961015	US 1995-471634	19950606 <--
	US 6034196	A	20000307	US 1997-963534	19971103 <--
	US 5910464	A	19990608	US 1998-3928	19980107 <--
	GR 3034738	T3	20010131	GR 2000-402427	20001031 <--
PRAI	IT 1992-MI1497	A	19920618		
	IT 1992-MI1498	A	19920618		
	IT 1992-MI2179	A	19920924		
	IT 1992-MI2180	A	19920924		
	IT 1993-MI943	A	19930511		
	US 1993-79005	B1	19930618		
	US 1993-79133	B2	19930618		
	US 1993-126328	B1	19930924		
	US 1993-140579	B1	19931021		
	US 1994-357099	B1	19941215		
	US 1995-436647	B1	19950508		
	US 1995-468769	B1	19950606		
	US 1996-589058	B1	19960119		
	US 1996-595511	B1	19960201		
	US 1996-737000	B1	19961025		
	US 1997-819105	B1	19970317		
OS	MARPAT 121:84217				
AB	<p>A highly active catalyst for the polymerization of olefins comprises the product obtained by contacting: (A) a titanium, zirconium or hafnium mono- or bis-cyclopentadienyl compound, this latter optionally containing a bridging group which links the two cyclopentadienyl compds.; (B) an alkylaluminum wherein at least one alkyl is different from a straight alkyl and optionally containing Si or Ge; and (C) water. The mol ratio Al/water is higher than 1:1 and lower than 100:1, and at least a portion of the Al is present in a form different than the dialuminoxane formed from the alkylaluminum and water. Thus, ethylene was polymerized 4 h in PhMe in the presence of bis(pentamethylcyclopentadienyl)zirconium dichloride, (iso-Bu)3Al, and water at 50° and Al-water mol ratio 1.2 to give polymer with intrinsic viscosity 9.90 dL/g (tetrahydronaphthalene, 135°).</p>				
L9	ANSWER 83 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN				
AN	1994:410185 CAPLUS				
DN	121:10185				
TI	Catalysts for the preparation of polyolefin waxes				
IN	Herrmann, Hans Friedrich; Boehm, Ludwig; Voigt, Hartmut; Spaleck, Walter; Hohner, Gerd				
PA	Hoechst A.-G., Germany				
SO	Eur. Pat. Appl., 19 pp. CODEN: EPXXDW				

DT Patent
LA German
FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 571882	A2	19931201	EP 1993-108106	19930518 <--
	EP 571882	A3	19940706		
	EP 571882	B1	19970312		
	R: AT, BE, CH, DE, ES, FR, GB, IT, LI, NL, SE				
	AT 150037	E	19970315	AT 1993-108106	19930518 <--
	ES 2100388	T3	19970616	ES 1993-108106	19930518 <--
	SK 280438	B6	20000214	SK 1993-514	19930520 <--
	BR 9302041	A	19931130	BR 1993-2041	19930524 <--
	CZ 282810	B6	19971015	CZ 1993-983	19930524 <--
	AU 9338765	A1	19931202	AU 1993-38765	19930525 <--
	AU 663585	B2	19951012		
	ZA 9303630	A	19931220	ZA 1993-3630	19930525 <--
	JP 06049129	A2	19940222	JP 1993-122479	19930525 <--
	JP 3429334	B2	20030722		
PRAI	DE 1992-4217378	A	19920526		

OS MARPAT 121:10185

AB Solid waxes which are easily separated from suspending media are prepared by polymerizing suspensions of (di)olefins in the presence of metallocene derivs. of Group IVB, VB, or VIB metals of specified structure and cocatalysts at -40° to 100° and 0.5-120 bar. Stirring 7 mg bis(methylcyclopentadienyl)zirconium dichloride (preactivated with Me aluminoxane) and 2 mL PhMe solution of Me aluminoxane in 4 kg propane with C2H4 at 70°/33.5 bar with addition of 4 g H (in 60 portions) for 1 h gave a wax with **catalyst** activity 32.6 kg/mmol Zr, viscosity number 33 mL/g, melt viscosity 1.32 Pa-s at 140°, m.p. 130°, and heat of fusion 280 J/g.

L9 ANSWER 84 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1994:271452 CAPLUS

DN 120:271452

TI Preparation of polyolefins using metallocenes with specifically substituted indenyl ligands

IN Winter, Andreas; Kueber, Frank; Spaleck, Walter; Riepl, Herbert; Herrmann, Wolfgang Anton; Dolle, Volker; Rohrmann, Juergen

PA Hoechst A.-G., Germany

SO Eur. Pat. Appl., 24 pp.

CODEN: EPXXDW

DT Patent

LA German

FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 582194	A1	19940209	EP 1993-112056	19930728 <--
	EP 582194	B1	19980506		
	R: AT, BE, CH, DE, ES, FR, GB, IT, LI, LU, NL, SE				
	AT 165832	E	19980515	AT 1993-112056	19930728 <--
	ES 2114978	T3	19980616	ES 1993-112056	19930728 <--
	JP 06157661	A2	19940607	JP 1993-192584	19930803 <--
	JP 3268903	B2	20020325		
	US 5455365	A	19951003	US 1993-101408	19930803 <--
	US 5869584	A	19990209	US 1995-458428	19950602 <--
	US 37573	E	20020305	US 1999-252719	19990219
PRAI	DE 1992-4225649	A	19920803		
	DE 1990-4035884	A	19901112		
	US 1991-789361	A2	19911108		
	US 1993-101408	A3	19930803		

OS MARPAT 120:271452

AB High-mol.-weight polyolefins with lower crystallinity and m.p. and higher processing flow are manufactured by polymerization in the presence of an aluminoxane and a metallocene based on a group IVB, VB, or VIB metal and an optionally substituted **indene**, with the **indene** ligands optionally connected by bridges optionally containing a Si, Ge, or Sn atom. Thus, polymerization of propylene in the presence of Me aluminoxane and racemic dimethylsilanediylbis(2,5,6-trimethyl-1-indenyl)zirconium dichloride (I)

gave polymer with viscosity number 101 cm³/g, weight-average mol. weight 100,000, polydispersity 2.5, m.p. 130°, and isotactic index 89%, at activity 27.8 kg/g I h.

L9 ANSWER 85 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1994:192366 CAPLUS

DN 120:192366

TI The Influence of Aromatic Substituents on the Polymerization Behavior of Bridged Zirconocene Catalysts

AU Spaleck, Walter; Kueber, Frank; Winter, Andreas; Rohrmann, Juergen; Bachmann, Bernd; Antberg, Martin; Dolle, Volker; Paulus, Erich F.

CS Hoechst AG, Frankfurt/Main, 65926, Germany

SO Organometallics (1994), 13(3), 954-63

CODEN: ORGND7; ISSN: 0276-7333

DT Journal

LA English

AB The synthesis of seven new bridged zirconocenes is described, which make isotactic polypropylene when used in polymns. of propylene with methylaluminoxane as cocatalyst. Their polymerization behavior in propylene and ethylene polymns. is examined and discussed. Aromatic substituents in appropriate positions of the zirconocene ligand frame result in catalysts with activities, stereospecificities, and polypropylene mol. wts. much higher than those of any previously described metallocene system. By structure variations it is demonstrated that the effectiveness of these substitutions strongly depends on their position and on a nonincremental synergism with alkyl substituents on the ligand frame. The high activities of the systems can be explained well by electronic effects, whereas steric effects obviously play the more important role for the high stereospecificities and high mol. wts. of the polymers.

L9 ANSWER 86 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1994:165214 CAPLUS

DN 120:165214

TI Catalysts containing metallocenes from bridged indenenes for polymerization of olefins

IN Winter, Andreas; Antberg, Martin; Dolle, Volker; Rohrmann, Juergen; Spaleck, Walter

PA Hoechst A.-G., Germany; Basell Polyolefine GmbH

SO Eur. Pat. Appl., 19 pp.

CODEN: EPXXDW

DT Patent

LA German

FAN. CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 537686	A1	19930421	EP 1992-117477	19921013 <--
	EP 537686	B1	20050112		
	R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, NL, SE				
	JP 05306304	A2	19931119	JP 1992-274649	19921013 <--
	JP 3394997	B2	20030407		
	AT 286918	E	20050115	AT 1992-117477	19921013
	CA 2080576	AA	19930416	CA 1992-2080576	19921014 <--
	ZA 9207905	A	19930421	ZA 1992-7905	19921014 <--
	AU 9226395	A1	19930422	AU 1992-26395	19921014 <--
	AU 659218	B2	19950511		
	US 5304614	A	19940419	US 1992-960893	19921014 <--
PRAI	DE 1991-4134088	A	19911015		

OS MARPAT 120:165214

AB Polyolefins with low crystallinity, mol. weight, and m.p. and high impact strength, transparency, and processability are prepared by polymerization in the presence of transition metal sandwich compds. of bridged bisindenenes of specified structure and aluminoxane cocatalysts. Condensing 2,5-hexanedione with cyclopentadiene in the presence of Na gave 65% 4,7-dimethylindene, reaction of which with BuLi and Me₂SiCl₂ gave 37% 1,1'-(dimethylsilylene)bis(4,7-dimethylindene), reaction of which with BuLi and ZrCl₂ gave 72% dichlorozirconocene (I). Stirring 60 mmol (as Al) Me aluminoxane (d.p. 20) and 0.02 mmol I with 10 dm³ liquid C₃H₆ at 70° for 1 h gave polypropylene with catalyst activity 140.4 kg/g I-h, weight-average mol. weight 14,500, polydispersity 2.1, and m.p.

128°.

L9 ANSWER 87 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1994:135205 CAPLUS
DN 120:135205
TI ansa-Zirconocene **Polymerization** Catalysts with Anelated Ring
Ligands - Effects on Catalytic Activity and Polymer Chain Length
AU Stehling, Udo; Diebold, Josef; Kirsten, Robin; Roell, Werner; Brintzinger,
Hans Herbert; Juengling, Stephan; Muelhaupt, Rolf; Langhauser, Franz
CS Fakultae fuer Chemie, Universitaet Konstanz, Konstanz, 78434, Germany
SO Organometallics (1994), 13(3), 964-70
CODEN: ORGND7; ISSN: 0276-7333
DT Journal
LA English
AB The dimethylsilyl-bridged zirconocene complexes
Me2Si(benz[e]indenyl)2ZrCl2 (I) and Me2Si(2-methylbenz[e]indenyl)2ZrCl2
(II) were synthesized; the structure of II was determined by X-ray diffraction.
I was .apprx.4 times more active in polymerizing propene than its bis(indenyl)
analog when activated with Me aluminoxane under otherwise identical
conditions. The **catalyst** system also polymerized 3-methyl-1-butene
and 3-methyl-1-pentene. Polymers produced with II had mol. wts. .apprx.4
times higher than those obtained with I under identical conditions. The
 α -Me substituents of II appeared to block those chain terminations
arising from β -H transfer directly to a coordinated monomer mol.

L9 ANSWER 88 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1994:108024 CAPLUS
DN 120:108024
TI Metallocene catalysts for the **polymerization** of olefins.
IN Spaleck, Walter; Rohrmann, Juergen; Antberg, Martin
PA Hoechst A.-G., Germany
SO Eur. Pat. Appl., 23 pp.
CODEN: EPXXDW
DT Patent
LA German

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	---	-----	-----	-----
PI	EP 530647	A1	19930310	EP 1992-114464	19920825 <--
	EP 530647	B1	19980128		
	R: AT, BE, CH, DE, ES, FR, GB, IT, LI, LU, NL, SE				
	US 5278264	A	19940111	US 1992-934573	19920824 <--
	CA 2076775	AA	19930227	CA 1992-2076775	19920825 <--
	CA 2076775	C	20040127		
	AU 9221254	A1	19930304	AU 1992-21254	19920825 <--
	AU 650776	B2	19940630		
	ZA 9206402	A	19930428	ZA 1992-6402	19920825 <--
	JP 07188318	A2	19950725	JP 1992-226230	19920825 <--
	JP 3389265	B2	20030324		
	RU 2078771	C1	19970510	RU 1992-5052582	19920825 <--
	EP 773204	A2	19970514	EP 1997-101674	19920825 <--
	EP 773204	A3	20010117		
	EP 773204	B1	20021204		
	R: AT, BE, CH, DE, ES, FR, GB, IT, LI, LU, NL, SE				
	AT 162808	E	19980215	AT 1992-114464	19920825 <--
	ES 2113392	T3	19980501	ES 1992-114464	19920825 <--
	AT 228986	E	20021215	AT 1997-101674	19920825
	ES 2188807	T3	20030701	ES 1997-101674	19920825
	JP 2003183189	A2	20030703	JP 2002-300853	19920825
	JP 3482412	B2	20031222		
	US 5329033	A	19940712	US 1993-142512	19931025 <--
PRAI	DE 1991-4128238	A	19910826		
	US 1992-934573	A3	19920824		
	EP 1992-114464	A3	19920825		
	JP 1992-226230	A3	19920825		

OS MARPAT 120:108024

AB The title catalysts are used to prepare polyolefins with narrow mol. weight
distributions and, for prochiral olefins, variable microstructures.
2-Methyl-4-isopropylindene was prepared from 4-isopropyl-2-indanone and

MeMgBr and used with BuLi and Me₂SiCl₂ to prepare (dimethylsilylene)bis(2-methyl-4-isopropylindene) which was used with BuLi and ZrCl₄ to prepare [(dimethylsilylene)bis(2-methyl-4-isopropyl-1-indenyl)]zirconium dichloride (I). Polymerization of propene in the presence of I and Me aluminoxane at 70° for 1 h gave polypropene (weight-average mol. weight 180,000; polydispersity 2.2; m.p. 149.6°) at the rate of 436 kg/g I-h.

L9 ANSWER 89 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1994:107813 CAPLUS

DN 120:107813

TI Silolene-bridged zirconocenium **polymerization** catalysts

AU Tsai, Woei Min; Chien, James C. W.

CS Dep. Polym. Sci. Eng., Univ. Massachusetts, Amherst, MA, 01003, USA

SO Journal of Polymer Science, Part A: Polymer Chemistry (1994),

32(1), 149-58

CODEN: JPACEC; ISSN: 0887-624X

DT Journal

LA English

AB A new silacyclopentane-bridged compound, racemic (1,4-butanediyl)silylene-bis(1-η⁵-indenyl)dichlorozirconium (I) was synthesized by reacting ZrCl₄ with C₄H₈Si(IndLi)₂ in THF. I was reacted with trialkylaluminum and then with triphenylcarbenium tetrakis(pentafluorophenyl)borate to produce in situ the zirconocenium ion I⁺. This constant geometry **catalyst** is exceedingly stereoselective for propylene (II) polymerization at low temperature (Tp = -55°), producing refluxing n-heptane-insol. isotactic poly-II (i-PP) with a yield of 99.4%, Tm = 164.3°, ΔHf = 20.22 cal/g and Mw = 350,000. It has catalytic activities of 107-108 g PP/(mol Zr.[C₃H₆].h) in II polymerization at the Tp from -55° to 70°, and 108 polymer/(mol Zr.[monomer].h) in ethylene polymerization. The stereospecificity of I⁺ decreases gradually as Tp approaches 20°. At higher temps. the catalytic species rapidly lose stereochem. control. Under all exptl. conditions I⁺ is more stereospecific than the analogous cation derived from racemic dimethylsilylenebis(1-η⁵-indenyl)dichlorozirconium (III). The variations of polymerization activities in ethylene (IV) and in II for Tp from -55° to 70° indicates a Michaelis-Menten kinetics. The zirconocenium-II π-complex has a larger insertion rate constant but lower thermal stability than the corresponding IV π-complex. This **catalyst** copolymerizes IV and II with reactivity ratios of comparable magnitude rE .apprx. 4rp. Furthermore, rE.rP .apprx. 0.5 indicating random copolymer formation. Both I and III actived with methylaminoxane exhibit much slower polymerization rates, and, under certain conditions, a lower stereoselectivity than the corresponding I⁺ or III⁺ system.

L9 ANSWER 90 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1994:77899 CAPLUS

DN 120:77899

TI Polymerizing olefins to high molecular weight with metallocene-aluminoxane catalysts

IN Winter, Andreas; Rohrmann, Juergen; Dolle, Volker; Kueber, Frank

PA Hoechst A.-G., Germany

SO Eur. Pat. Appl., 23 pp.

CODEN: EPXXDW

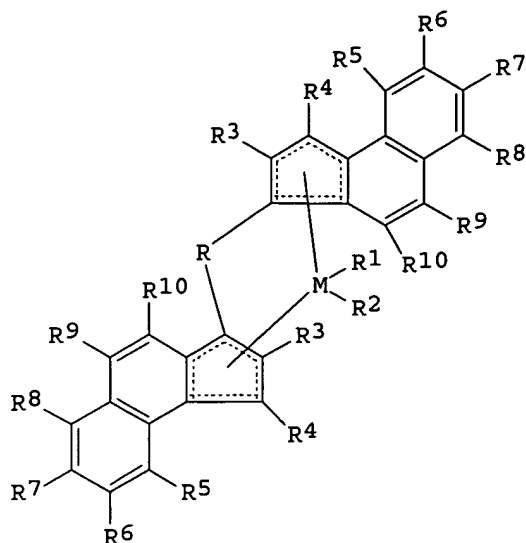
DT Patent

LA German

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 545303	A1	19930609	EP 1992-120288	19921127 <--
	EP 545303	B1	19971001		
	R: AT, BE, CH, DE, ES, FR, GB, IT, LI, LU, NL, SE				
	US 5328969	A	19940712	US 1992-980643	19921124 <--
	ZA 9209214	A	19930526	ZA 1992-9214	19921127 <--
	CA 2084015	AA	19930531	CA 1992-2084015	19921127 <--
	AU 9229726	A1	19930603	AU 1992-29726	19921127 <--
	AU 651914	B2	19940804		
	JP 07258321	A2	19951009	JP 1992-319100	19921127 <--

JP 3464231	B2	20031105		
EP 770587	A2	19970502	EP 1997-101673	19921127 <--
EP 770587	A3	19970820		
EP 770587	B1	20060322		
R: AT, BE, CH, DE, ES, FR, GB, IT, LI, LU, NL, SE				
AT 158800	E	19971015	AT 1992-120288	19921127 <--
ES 2108072	T3	19971216	ES 1992-120288	19921127 <--
RU 2111211	C1	19980520	RU 1992-4481	19921130 <--
US 5374752	A	19941220	US 1994-232368	19940425 <--
US 5830821	A	19981103	US 1995-470765	19950606 <--
US 5932669	A	19990803	US 1995-470340	19950606 <--
PRAI DE 1991-4139596	A	19911130		
US 1992-980643	A3	19921124		
US 1992-980882	B1	19921124		
US 1992-980992	B1	19921124		
EP 1992-120288	A3	19921127		
US 1994-291078	B1	19940817		
US 1995-373862	A3	19950117		
OS MARPAT 120:77899				
AB	<p>The catalysts, which can be used together with H for mol. weight control, comprise bridged metallocene derivs. of Group IVB, VB, or VIB metals of specified structure and aluminoxanes. Friedel-Crafts condensation of 1,3-iso-Pr₂C₆H₄ with 2-bromoisobutyryl chloride and reduction and dehydration of the resulting indanones (obtained in 78% yield) gave 86% 4,6- and 5,7-diisopropyl-2-methylindene. Reaction of the 4,6-isomer with BuLi and Me₂SiCl₂ in THF gave 84% diindenylsilane, which was treated with BuLi and ZrCl₄ to give 60% dichloro[(dimethylsilylene)bis(4,6-diisopropyl-2-methylindenyl)]zirconium (I). Stirring 5 mmol I and 52 mmol (as Al) Me aluminoxane with 12 dm³ liquid C₃H₆ at 75° for 1 h gave 603 kg isotactic polypropylene/g I-h with weight-average mol. weight 305,000, polydispersity 2.0, and melt index (230°, 5 kg) 8.5 dg/min.</p>			
L9	ANSWER 91 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN			
AN	1994:54699 CAPLUS			
DN	120:54699			
TI	Metallocenes having benzo-fused indenyl derivatives as ligands, processes for their preparation and their use as olefin polymerization catalysts			
IN	Rohrmann, Juergen; Dolle, Volker; Winter, Andreas; Kueber, Frank			
PA	Hoechst A.-G., Germany			
SO	Can. Pat. Appl., 44 pp.			
	CODEN: CPXXEB			
DT	Patent			
LA	English			
FAN.CNT 2				
	PATENT NO.	KIND	DATE	APPLICATION NO. DATE
	-----	----	-----	-----
PI	CA 2084017	AA	19930531	CA 1992-2084017 19921127 <--
	ZA 9209213	A	19930524	ZA 1992-9213 19921127 <--
	AU 9229728	A1	19930603	AU 1992-29728 19921127 <--
	AU 651915	B2	19940804	
	EP 549900	A1	19930707	EP 1992-120287 19921127 <--
	EP 549900	B1	19960821	
	R: AT, BE, CH, DE, ES, FR, GB, IT, LI, LU, NL, SE			
	JP 06184179	A2	19940705	JP 1992-319099 19921127 <--
	JP 3371118	B2	20030127	
	AT 141609	E	19960915	AT 1992-120287 19921127 <--
	ES 2093166	T3	19961216	ES 1992-120287 19921127 <--
	RU 2098423	C1	19971210	RU 1992-4438 19921130 <--
	US 5455366	A	19951003	US 1995-373862 19950117 <--
PRAI	DE 1991-4139595	A	19911130	
	US 1992-980992	B1	19921124	
	US 1994-291078	B1	19940817	
OS	CASREACT 120:54699; MARPAT 120:54699			
GI				



I

AB Compds. of formula I [M = metal of Group IVB, VB, VIB (preferably Zr or Hf), R1 and R2 are identical or different and may include H, alkyl, alkoxy, aryl, alkenyl, OH or halogen; R3 to R10 are identical or different and may include H, halogen, alkyl, aryl or NR12, SR1, OSiR13, SiR13 or PR12 in which R1 is a halogen atom, an alkyl group or an aryl group; in addition, adjacent radicals R4 to R10, with atoms joining them may form an aromatic or aliphatic ring; R is a (substituted) alkylene or heteroatom bridge, e.g., BR11, AlR11, Ge, Sn, O, S, SO, NR11, CO, PR11 or P(O)R11, in which R11 may be H, halogen, alkyl, fluoroalkyl, etc.] are claimed, along with a process for their preparation. The process comprises reacting compound I (wherein MR1R2 = nothing) with MX4, eg., TiCl4 (M = Ti, X = Cl). I are shown to polymerize olefins, e.g., propylene in the presence of methylaluminoxane.

L9 ANSWER 92 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1993:671957 CAPLUS

DN 119:271957

TI Preparation of bridged chiral metallocenes for use as catalysts in the polymerization of olefins

IN Rohrmann, Juergen

PA Hoechst A.-G., Germany

SO Eur. Pat. Appl., 19 pp.

CODEN: EPXXDW

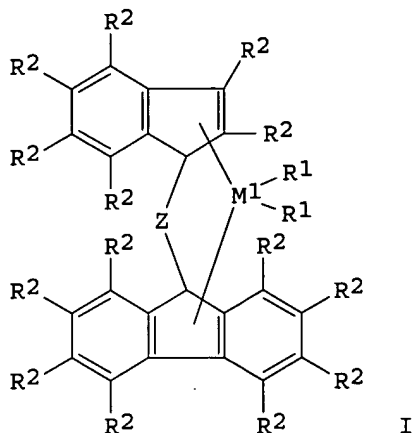
DT Patent

LA German

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 528287	A1	19930224	EP 1992-113469	19920807 <--
	EP 528287	B1	19981111		
	R: AT, BE, DE, ES, FR, GB, IT, NL, SE				
	EP 574597	A1	19931222	EP 1992-109988	19920613 <--
	EP 574597	B1	19980121		
	EP 574597	B2	20020626		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, PT, SE				
	AT 162529	E	19980215	AT 1992-109988	19920613 <--
	ES 2113900	T3	19980516	ES 1992-109988	19920613 <--
	US 5391789	A	19950221	US 1992-925985	19920805 <--
	RU 2081876	C1	19970620	RU 1992-5052236	19920806 <--
	CA 2075550	AA	19930209	CA 1992-2075550	19920807 <--
	AU 9220891	A1	19930211	AU 1992-20891	19920807 <--
	AU 650554	B2	19940623		
	ZA 9205936	A	19930428	ZA 1992-5936	19920807 <--
	JP 05345793	A2	19931227	JP 1992-211803	19920807 <--
	JP 3234876	B2	20011204		
	AT 173268	E	19981115	AT 1992-113469	19920807 <--
	ES 2124237	T3	19990201	ES 1992-113469	19920807 <--
	CA 2098258	AA	19931214	CA 1993-2098258	19930611 <--

AU 9340181	A1	19931216	AU 1993-40181	19930611 <--
AU 664896	B2	19951207		
ZA 9304148	A	19940113	ZA 1993-4148	19930611 <--
JP 06122692	A2	19940506	JP 1993-141949	19930614 <--
JP 3419501	B2	20030623		
US 5391790	A	19950221	US 1993-76991	19930615 <--
US 5616747	A	19970401	US 1994-339535	19941115 <--
PRAI DE 1991-4126234	A	19910808		
EP 1992-109988	A	19920613		
US 1993-76991	A3	19930615		
OS MARPAT 119:271957				
GI				



AB The chiral metallocenes I [M1 = Ti, Zr, Hf, V, Nb, Ta; R1 = alk(ox)yl, aryl(oxy), alkenyl, arylalkyl(ene), H, halogen; R2 = H, hydrocarbyl, halogen; Z = [M2(R3)2]p (M2 = C, Si, Ge, Sn; R3 = H, halogen, hydrocarbyl, or form a ring; p = 1-3)] are useful as catalysts in the preparation of α -olefin polymers with high mol. weight and low tacticity. The reaction of 1-[fluoren-9-yl(dimethylsilyl)]indene (prepared in 10% yield from fluorene, BuLi, and Me₂SiCl₂ in THF) with BuLi in Et₂O and then with ZrCl₄ in CH₂Cl₂ gave 46% crude (20% pure) [[fluoren-9-yl(dimethylsilyl)]indenyl]zirconium dichloride (II). Stirring 1.3 mg II, 75 mmol Me aluminoxane (mol. weight 750), and 10 dm³ dearomatized benzene with C₂H₄ at 70°/5 bar for 1 h gave 140 g polyethylene with viscosity number 380 mL/g.

L9 ANSWER 93 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1993:650177 CAPLUS

DN 119:250177

TI Process for the preparation of substituted indenenes and their use as ligands for metallocene olefin **polymerization** catalysts

IN Rohrmann, Juergen; Kueber, Frank

PA Hoechst A.-G., Germany

SO Eur. Pat. Appl., 20 pp.

CODEN: EPXXDW

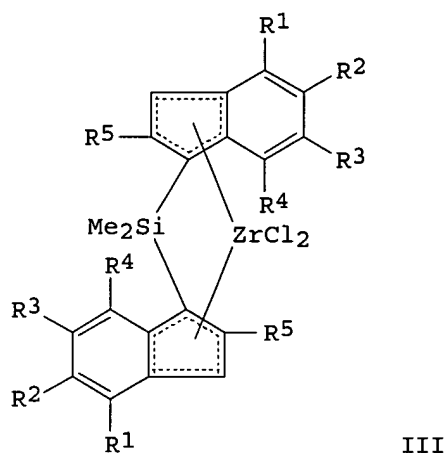
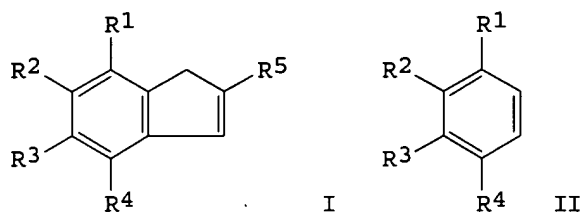
DT Patent

LA German

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 545304	A1	19930609	EP 1992-120289	19921127 <--
	EP 545304	B1	20020619		
	R: AT, BE, CH, DE, ES, FR, GB, IT, LI, LU, NL, SE				
	ZA 9209215	A	19930527	ZA 1992-9215	19921127 <--
	CA 2084016	AA	19930531	CA 1992-2084016	19921127 <--
	CA 2084016	C	20040622		
	AU 9229727	A1	19930603	AU 1992-29727	19921127 <--

AU 655088	B2	19941201		
JP 06206890	A2	19940726	JP 1992-319101	19921127 <--
JP 3290218	B2	20020610		
AT 219494	E	20020715	AT 1992-120289	19921127
JP 2002226405	A2	20020814	JP 2001-379159	19921127
JP 3434288	B2	20030804		
ES 2177523	T3	20021216	ES 1992-120289	19921127
RU 2103250	C1	19980127	RU 1992-4483	19921130 <--
US 5840948	A	19981124	US 1995-462587	19950605 <--
US 5852142	A	19981222	US 1995-462588	19950605 <--
US 6051522	A	20000418	US 1995-464459	19950605 <--
US 5929264	A	19990727	US 1997-890942	19970710 <--
PRAI DE 1991-4139594	A	19911130		
US 1992-980993	B1	19921124		
JP 1992-319101	A3	19921127		
US 1994-291738	B3	19940817		
US 1995-462587	A1	19950605		
OS CASREACT 119:250177; MARPAT 119:250177				
GI				



AB A process for the preparation of **indene** derivs. of formula I wherein R1-R5 are the same or different and may be H, alkyl, aryl, alkoxy, haloaryl, etc., comprises treatment of aryl compds. II with R5CMe(X1)C(O)X2 [X1, X2 = halo; e.g., X = Br, R5 = H] in the presence of a Friedel-Crafts **catalyst**, e.g., AlCl3, to give the corresponding indanone, followed by a reductive elimination with NaBH4. Silylation of I by sequential treatment with BuLi and diorganodichlorosilanes gave a bis(indenyl)silane intermediate which upon treatment with ZrCl4 gave silanediylmetallocene complexes such as III. III were examined for catalytic activity in the polymerization of propylene.

L9 ANSWER 94 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN
 AN 1993:540006 CAPLUS
 DN 119:140006
 TI Preparation of a bridged metallocene compound as well as a **catalyst** component and a process for the **polymerization** of olefins
 IN Van Beek, Johannus Antonius Maria
 PA DSM N.V., Neth.

SO Eur. Pat. Appl., 14 pp.

CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 530908	A1	19930310	EP 1992-202638	19920901 <--
	EP 530908	B1	19990421		
	EP 530908	B2	20030604		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, NL, PT, SE				
	NL 9101502	A	19930401	NL 1991-1502	19910906 <--
	AT 179177	E	19990515	AT 1992-202638	19920901 <--
	ES 2131058	T3	19990716	ES 1992-202638	19920901 <--
	JP 05239083	A2	19930917	JP 1992-235528	19920903 <--
	JP 3249192	B2	20020121		
	CA 2077613	AA	19930307	CA 1992-2077613	19920904 <--
	CA 2077613	C	19990907		
	RU 2095364	C1	19971110	RU 1992-5052763	19920904 <--
	CN 1070650	A	19930407	CN 1992-110283	19920905 <--
	US 5646083	A	19970708	US 1994-202738	19940228 <--
	CN 1128272	A	19960807	CN 1995-100512	19950103 <--
	CN 1049899	B	20000301		
PRAI	NL 1991-1502	A	19910906		
	US 1992-940287	B1	19920903		

AB A bridged double ligand reacting with a proton acceptor is converted into a bridged double anion and further reacting with a Group IVB, VB, VIB metal forms a bridged metallocene, the reaction is carried out in a liquid dispersant containing a weak Lewis base. Adding 13.41 mL 1.74M solution in hexane of BuLi to 11.67 mmol iso-Pr (9-fluorene)(1-cyclopentadiene) in 40 mL Et2O at -56°, heating to 25°, cooling to -56°, adding to ZrCl4 in Et2O, and allowing to warm to 25° gave a catalyst suspension component (A). C2H4 was polymerized in the presence of A in 50 mL gasoline (0.015M Zr) and Me aluminoxane in PhMe.

L9 ANSWER 95 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1992:613186 CAPLUS

DN 117:213186

TI Preparation of bisindene derivative metallocenes as catalysts for polymerization of olefins

IN Winter, Andreas; Antberg, Martin; Spaleck, Walter; Rohrmann, Juergen; Dolle, Volker

PA Hoechst A.-G., Germany

SO Eur. Pat. Appl., 21 pp.

CODEN: EPXXDW

DT Patent

LA German

FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 485821	A1	19920520	EP 1991-118680	19911101 <--
	EP 485821	B1	19960612		
	R: BE, DE, ES, FR, GB, IT, NL				
	ES 2090209	T3	19961016	ES 1991-118680	19911101 <--
	US 5276208	A	19940104	US 1991-789361	19911108 <--
	AU 9187760	A1	19920514	AU 1991-87760	19911111 <--
	AU 640287	B2	19930819		
	ZA 9108927	A	19920729	ZA 1991-8927	19911111 <--
	JP 06340684	A2	19941213	JP 1991-294690	19911111 <--
	JP 3282839	B2	20020520		
	US 37208	E	20010605	US 1994-324260	19941017 <--
	US 37573	E	20020305	US 1999-252719	19990219
PRAI	DE 1990-4035884	A	19901112		
	US 1991-789361	A2	19911108		
	DE 1992-4225649	A	19920803		
	US 1993-101408	A5	19930803		

OS MARPAT 117:213186

AB Sandwich complexes of Group IVB, VB, or VIB metals with bisindenes of specified structure are catalysts for polymerization of olefins with high

isotacticity and mol. weight The reaction of 2-methylindene, BuLi, and Me₂SiCl₂ in Et₂O gave 52% (dimethylsilylene)bis(2-methylindene), reaction of which with BuLi and ZrCl₄ in THF-CH₂Cl₂ gave 14% racemic complex which was hydrogenated over Pt in CH₂Cl₂ to give 60% 4,4',5,5',6,6',7,7'-octahydro derivative (I). Stirring 12 dm³ liquid C₃H₆ with 72 mmol (as Al) Me aluminoxane and 0.011 mmol I at 70° for 3 h gave polypropylene with productivity 50.3 kg/g I-h, weight-average mol. weight 24,300, polydispersity 2.4, isotactic index 96%, and m.p. 150°.

L9 ANSWER 96 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1992:531730 CAPLUS

DN 117:131730

TI Olefin polymers, their preparation and metallocene catalysts therefore

IN Winter, Andreas; Antberg, Martin; Spaleck, Walter; Rohrmann, Juergen;

Dolle, Volker

PA Hoechst A.-G., Germany

SO Eur. Pat. Appl., 19 pp.

CODEN: EPXXDW

DT Patent

LA German

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 485820	A2	19920520	EP 1991-118679	19911101 <--
	EP 485820	A3	19921125		
	EP 485820	B1	19960821		
	R: BE, DE, ES, FR, GB, IT, NL				
	EP 722956	A2	19960724	EP 1996-100539	19911101 <--
	EP 722956	A3	19970212		
	EP 722956	B1	20010816		
	R: BE, DE, ES, FR, GB, IT, NL				
	ES 2093058	T3	19961216	ES 1991-118679	19911101 <--
	ES 2162953	T3	20020116	ES 1996-100539	19911101
	CA 2055220	AA	19920513	CA 1991-2055220	19911108 <--
	AU 9187761	A1	19920514	AU 1991-87761	19911111 <--
	AU 640288	B2	19930819		
	ZA 9108924	A	19920729	ZA 1991-8924	19911111 <--
	JP 04268308	A2	19920924	JP 1991-294689	19911111 <--
	JP 3143174	B2	20010307		
	JP 11209420	A2	19990803	JP 1998-320953	19911111 <--
	US 5239022	A	19930824	US 1992-962032	19921015 <--
PRAI	DE 1990-4035885	A	19901112		
	EP 1991-118679	A3	19911101		
	US 1991-789733	A1	19911108		
	JP 1991-294689	A3	19911111		

OS MARPAT 117:131730

AB The title polymes are obtained by olefin polymerization in the presence of aluminoxanes and bis(tetrahydroindenyl) transition metal complexes (I; R₁,R₂ = H, organic-group, halogen; R₃,R₄ = H, halogen, organic group optionally containing heteroatom or halogen; R₅,R₆ as for R₃,R₄ but not H; R₇ = organic or heteroatom-containing organic group; R₈,R₉,R₁₀ = H, halogen, organic group; m, n = 0-2, with m + n = 0-2; μ = IVb, Vb, VIb element). Thus, dimethylsilylenebis(2-methyl-4,5,6,7-tetrahydro-1-indene)zirconium dichloride (II) was obtained by hydrogenation of the methylindene analog. To propylene (12 dm²) mixed with 35 cm³ PhMe containing Me aluminoxane (52 mmol Al) at 30° was added 5.3 mg II mixed with Me aluminoxane (20 mmol Al) and polymerization was undertaken at 70° to provide isotactic polypropylene at 50.34 kg polymer/g II. The use of catalysts containing **indene** instead of tetrahydroindene or without substitution at the 2 position of the **indene** ring gave polymer with lower crystallinity and m.p.

L9 ANSWER 97 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1992:531729 CAPLUS

DN 117:131729

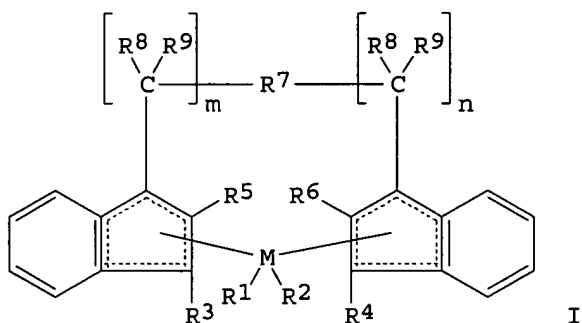
TI Substituted bisindenyl-metallocenes, their preparation and use as catalysts for the polymerization of olefins

IN Winter, Andreas; Antberg, Martin; Spaleck, Walter; Rohrmann, Juergen;

Dolle, Volker

PA Hoechst A.-G., Germany
 SO Eur. Pat. Appl., 19 pp.
 CODEN: EPXXDW
 DT Patent
 LA German
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 485823	A1	19920520	EP 1991-118682	19911101 <--
	EP 485823	B1	19950308		
	R: BE, DE, ES, FR, GB, IT, NL				
	ES 2071888	T3	19950701	ES 1991-118682	19911101 <--
	CA 2055219	AA	19920513	CA 1991-2055219	19911108 <--
	CA 2055219	C	20020806		
	US 5145819	A	19920908	US 1991-790234	19911108 <--
	AU 9187757	A1	19920514	AU 1991-87757	19911111 <--
	AU 641341	B2	19930916		
	ZA 9108926	A	19920729	ZA 1991-8926	19911111 <--
	JP 04300887	A2	19921023	JP 1991-294687	19911111 <--
	JP 3272005	B2	20020408		
	US 37384	E	20010918	US 1999-352824	19990713 <--
PRAI	DE 1990-4035883	A	19901112		
OS	MARPAT 117:131729				
GI					



AB I (R1,R2 = H, organic group, halogen; R3,R4 = H, halogen, organic group optionally containing heteroatom; R5,R6 = as for R3, R4 but not H; R7 = organic or heteroatom-containing organic group; R8,R9,R10 = H, halogen, organic group; m,n = 0-2, with m + n = 0-2;; M = IVb, Vb, VIb element) are obtained for use as catalysts, in conjunction with aluminoxanes, for the stereospecific polymerization of olefins. Thus, 1,2-ethenediylbis(2-methyl-1-indene)zirconium dichloride (II) was obtained from the ligand and ZrCl4 in THF. Propylene (12 dm3) was mixed with 35 cm3 PhMe containing Me aluminoxane (52 mmol Al) and to this was added 6.9 mg II and Me aluminoxane (20 mmol Al) in PhMe and the mixture was heated at 70° to give 1.56 kg isotactic polypropylene (226 kg polymer/g II). Use of metallocenes unsubstituted in the 2-position of the **indene** ring resulted in lower mol. weight polymers.

L9 ANSWER 98 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN
 AN 1991:493164 CAPLUS
 DN 115:93164
 TI Catalysts for **polymerization** of olefins to waxes with control of isotacticity
 IN Winter, Andreas; Rohrmann, Juergen; Dolle, Volker; Antberg, Martin; Spaleck, Walter
 PA Hoechst A.-G., Germany
 SO Eur. Pat. Appl., 10 pp.
 CODEN: EPXXDW
 DT Patent
 LA German
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	EP 416566	A2	19910313	EP 1990-117039	19900905 <--
	EP 416566	A3	19920812		
	EP 416566	B1	19990714		
	R: BE, DE, ES, FR, GB, IT, NL				
	DE 3929693	A1	19910314	DE 1989-3929693	19890907 <--
	JP 03100004	A2	19910425	JP 1990-233460	19900905 <--
	JP 3041024	B2	20000515		
	ES 2135375	T3	19991101	ES 1990-117039	19900905 <--
	CA 2024718	AA	19910308	CA 1990-2024718	19900906 <--
	AU 9062190	A1	19910314	AU 1990-62190	19900906 <--
	AU 625142	B2	19920702		
	ZA 9007099	A	19910626	ZA 1990-7099	19900906 <--
	US 5962719	A	19991005	US 1995-461141	19950605 <--
	US 6063880	A	20000516	US 1995-464458	19950605 <--
PRAI	DE 1989-3929693	A	19890907		
	US 1990-577899	B1	19900905		
	US 1994-287101	B1	19940808		
OS	MARPAT 115:93164				
AB	<p>Catalysts for polymerization of olefins to waxes with isotacticity which is a function of polymerization temperature comprise aluminoxanes and Group IVB, VB, or VIB metallocenes. Condensing 1-isopropylideneindene with indene in the presence of BuLi gave racemic 1,1'-isopropylidenebiindene which reacted with ZrCl₄ in the presence of BuLi to give (1,1'-isopropylidenebiindenyl)zirconium dichloride (I). Stirring 10 dm³ propene with 105 mg I and 60 mmol (as Al) Me aluminoxane (d.p. 20) at 30° for 5 h gave polypropene wax with productivity 5.9 kg/g I-h, weight-average mol. weight 15,900, polydispersity 2.4, isotacticity 95.6%, bulk d. 0.360, m.p. 142°, and indentation hardness 1400 bar, vs. 9.9, 16,500, 2.8, 90.2, 0.382, 132, and 1170, resp., when the polymerization was carried out at 40° for 3 h.</p>				
L9	ANSWER 99 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN				
AN	1991:430104 CAPLUS				
DN	115:30104				
TI	Process and catalysts for preparing ethylene polymers				
IN	Spaleck, Walter; Antberg, Martin; Boehm, Ludwig; Rohrmann, Juergen; Lueker, Hartmut				
PA	Hoechst A.-G., Germany				
SO	Eur. Pat. Appl., 17 pp.				
	CODEN: EPXXDW				
DT	Patent				
LA	German				
FAN.CNT	1				
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	EP 399348	A2	19901128	EP 1990-109207	19900516 <--
	EP 399348	A3	19920812		
	EP 399348	B1	19980520		
	R: BE, DE, ES, FR, GB, IT, NL				
	DE 3916555	A1	19901122	DE 1989-3916555	19890520 <--
	EP 700937	A2	19960313	EP 1995-117503	19900516 <--
	EP 700937	A3	19970219		
	EP 700937	B1	20000216		
	R: BE, DE, ES, FR, GB, IT, NL				
	ES 2116263	T3	19980716	ES 1990-109207	19900516 <--
	ES 2144089	T3	20000601	ES 1995-117503	19900516 <--
	CA 2017190	AA	19901120	CA 1990-2017190	19900518 <--
	CA 2017190	C	20010130		
	JP 03021607	A2	19910130	JP 1990-127075	19900518 <--
	JP 2904301	B2	19990614		
	ZA 9003831	A	19910227	ZA 1990-3831	19900518 <--
	AU 9055771	A1	19910110	AU 1990-55771	19900523 <--
	AU 630451	B2	19921029		
PRAI	DE 1989-3916555	A	19890520		
	EP 1990-109207	A3	19900516		
OS	MARPAT 115:30104				
AB	<p>Ethylene homopolymers and copolymers with α-olefins are prepared with high mol. weight and low polydispersity by polymerization in the presence of a catalysts containing aluminoxanes and transition metal metallocenes. Thus,</p>				

[(dimethylsilylene)bis(1-inden-1-yl)]zirconium dichloride [prepared from (dimethylsilylene)bis(1-indene), BuLi, and ZrCl₄·2THF] was mixed (4.0 mg) with 30 mL 10.5% Me aluminoxane and used to polym. ethylene at 65°/5 bar for 60 min., giving 300 g polyethylene with viscosity number 323 mL/g, bulk d. 0.210, and average particle size 50 µm.

L9 ANSWER 100 OF 101 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1991:247975 CAPLUS

DN 114:247975

TI **Polymerization** of cycloolefins with metallocene-aluminoxane catalysts, and the resulting polymers

IN Brekner, Michael Joachim; Rohrmann, Juergen; Spaleck, Walter; Antberg, Martin

PA Hoechst A.-G., Germany

SO Eur. Pat. Appl., 24 pp.

CODEN: EPXXDW

DT Patent

LA German

FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 407870	A2	19910116	EP 1990-112732	19900704 <--
	EP 407870	A3	19910626		
	EP 407870	B1	19971210		
	R: BE, DE, ES, FR, GB, IT, NL				
	DE 3922546	A1	19910117	DE 1989-3922546	19890708 <--
	EP 690078	A1	19960103	EP 1995-115275	19900704 <--
	EP 690078	B1	20010321		
	R: BE, DE, ES, FR, GB, IT, NL				
	EP 773242	A2	19970514	EP 1997-102182	19900704 <--
	EP 773242	A3	19980311		
	R: BE, DE, ES, FR, GB, IT, NL				
	EP 791611	A2	19970827	EP 1997-108175	19900704 <--
	EP 791611	A3	19980429		
	EP 791611	B1	20030212		
	R: BE, DE, ES, FR, GB, IT, NL				
	ES 2113343	T3	19980501	ES 1990-112732	19900704 <--
	ES 2157280	T3	20010816	ES 1995-115275	19900704 <--
	ES 2192238	T3	20031001	ES 1997-108175	19900704
	US 5087677	A	19920211	US 1990-548083	19900705 <--
	AU 9058722	A1	19910110	AU 1990-58722	19900706 <--
	AU 622337	B2	19920402		
	CA 2020640	AA	19910209	CA 1990-2020640	19900706 <--
	CA 2020640	C	20050208		
	JP 03045612	A2	19910227	JP 1990-177608	19900706 <--
	JP 3154999	B2	20010409		
	ZA 9005308	A	19910424	ZA 1990-5308	19900706 <--
	JP 2002348324	A2	20021204	JP 2002-100342	19900706
	JP 11315124	A2	19991116	JP 1999-20461	19990128 <--
	JP 3334106	B2	20021015		
	JP 2001270915	A2	20011002	JP 2001-55797	20010228 <--
	JP 3332368	B2	20021007		
PRAI	DE 1989-3922546	A	19890708		
	EP 1990-112732	A3	19900704		
	JP 1990-177608	A3	19900706		
	JP 1999-20461	A3	19900706		
	JP 2001-55797	A3	19900706		
OS	MARPAT 114:247975				
AB	Polymerization of bi- or polycyclic cycloolefins containing ≥1 endomethylene group with monocyclic cycloolefins and/or acyclic olefins in the presence of metallocenes of Ti, Zr, Hf, V, Nb, or Ta and aluminoxanes gives copolymers with viscosity number >20 mL/g and often with glass temperature >100°. Stirring a solution (aged 15 min) of 30.5 mg [1,1'-(dimethylsilylene)bisindenyl]zirconium dichloride (prepared from di-1-indenyl dimethylsilane and ZrCl ₄ ·2THF in THF) in 10 mL 10.1% PhMe solution of Me aluminoxane (mol. weight 1300) with 20 mL of the same aluminoxane solution, 25 g norbornene, 750 mL PhMe, and C ₂ H ₄ at 20°/1 bar for 1 h gave 55 g copolymer with viscosity number 244 mL/g and glass temperature 32°.				

L9 ANSWER 101 OF 101 CAPLUS COPYRIGHT 2006 ACS on STM
 AN 1990:441527 CAPLUS
 DN 113:41527
 TI Silicon-bridged transition metal compounds as catalysts for
 polymerization of olefins
 IN Welborn, Howard Curtis
 PA Exxon Chemical Patents, Inc., USA
 SO Eur. Pat. Appl., 25 pp.
 CODEN: EPXXDW
 DT Patent
 LA English
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 344887	A2	19891206	EP 1989-302675	19890317 <--
	EP 344887	A3	19910410		
	R: AT, BE, DE, ES, FR, GB, IT, LU, NL, SE				
	CA 1341404	A1	20021203	CA 1989-593778	19890315
	AU 8931478	A1	19890921	AU 1989-31478	19890320 <--
	AU 629818	B2	19921015		
	FI 8901310	A	19890922	FI 1989-1310	19890320 <--
	NO 8901209	A	19890922	NO 1989-1209	19890320 <--
	BR 8901277	A	19891107	BR 1989-1277	19890320 <--
	JP 02131488	A2	19900521	JP 1989-66503	19890320 <--
	HU 53114	A2	19900928	HU 1989-1322	19890320 <--
	KR 175921	B1	19990515	KR 1989-3467	19890320 <--
	DK 8901379	A	19890922	DK 1989-1379	19890321 <--
	DK 175628	B1	20041227		
	CS 275682	B6	19920318	CS 1989-1726	19890321 <--
	US 5017714	A	19910521	US 1989-405090	19890907 <--
	US 5120867	A	19920609	US 1991-661274	19910226 <--
	US 5314973	A	19940524	US 1992-884450	19920518 <--
	US 5441920	A	19950815	US 1993-161828	19931202 <--
	JP 10218889	A2	19980818	JP 1997-370017	19971217 <--
	JP 3117078	B2	20001211		
PRAI	US 1988-170516	A	19880321		
	JP 1989-66503	A3	19890320		
	US 1989-405090	A3	19890907		
	US 1991-661274	A1	19910226		
	US 1992-884450	A3	19920518		

OS MARPAT 113:41527

AB Chiral silicon-bridged metallocene catalysts are easily prepared in high
 yield and useful for preparation of α -olefin polymers with high
 isotacticity. Thus, 10 mL 0.8 M PhMe solution of methylaluminumoxane was
 injected into 200 mL PhMe at 20°, then 10 mL PhMe containing 5 mg
 racemic dimethylsilanylene-bridged bistetrahydroindenylzirconium
 dichloride was added and 100 mL liquid C₃H₆ was immediately added, and
 stirred at 20° for 2 h to give a polymer having weight-average mol.-weight
 85,300, m.p. 15-31°, and tacticity 98.6%.

